

Workshop Manual

Audi A6 2011 ➤
Audi A7 Sportback 2011 ➤

8-speed automatic gearbox 0BK, four-wheel drive

Edition 08.2017



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List of Workshop Manual Repair Groups

Repair Group

- 00 - Technical data
- 32 - Torque converter
- 37 - Controls, housing
- 38 - Gears, control
- 39 - Final drive - front differential



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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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00 – Technical data

1 Identification

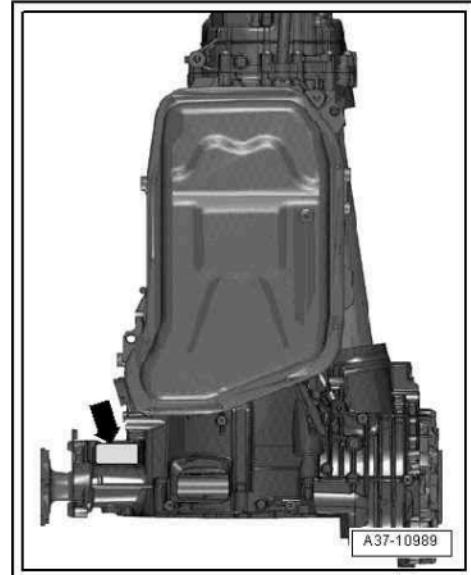
(ARL005372; Edition 08.2017)

⇒ ["1.1 Gearbox identification", page 1](#)

1.1 Gearbox identification

Location of code letters on gearbox

- ◆ The gearbox code letters are located on the identification plate on the underside of the gearbox. Fitting location of identification plate -arrow-.



Code letters and gearbox serial number

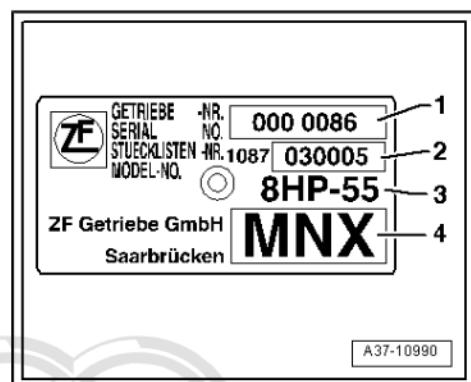
Example:

- 1 - Serial number of gearbox
- 2 - Model number
- 3 - Manufacturer's gearbox designation: 8HP-55
- 4 - Gearbox code, in this example: MNX



Note

- ◆ *The code letters for the gearbox are also given on the vehicle data stickers.*
- ◆ *Location of vehicle data stickers ⇒ Maintenance ; Booklet 411.*



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2 Safety precautions

- ⇒ [“2.1 Safety precautions when working on vehicle”, page 2](#)
- ⇒ [“2.2 Safety precautions when working on vehicles with start/stop system”, page 3](#)
- ⇒ [“2.3 Safety precautions when using testers and measuring instruments during a road test”, page 3](#)
- ⇒ [“2.4 Safety precautions when working on subframe”, page 3](#)
- ⇒ [“2.5 Safety precautions when tow-starting and towing”, page 4](#)

2.1 Safety precautions when working on vehicle

Observe the following precautions to avoid possible injury and/or damage to the vehicle:



WARNING

Accidents and injury can be caused if a gear is inadvertently engaged while the engine is running.

- ◆ *Before performing any work with the engine running, set the gearbox to position “P” and pull up the parking brake button to apply the electromechanical parking brake.*

Danger from toxic exhaust gases when engine is running.

- ◆ *When the engine is running, the exhaust system must always be connected to the exhaust gas extractor.*

Risk of injury as the radiator fan(s) may start up automatically.

- ◆ *Unplug electrical connectors before working in vicinity of radiator cowl.*

Observe the following precautions to avoid possible injury and/or irreparable damage to electrical and electronic components:

- ◆ *Switch off ignition before disconnecting and connecting test equipment.*



Caution

When disconnecting the battery there is a risk of irreparable damage to electronic components.

- ◆ *Observe notes on procedure for disconnecting the battery.*
- ◆ *Always switch off the ignition before disconnecting the battery ⇒ Electrical system; Rep. gr. 27; Battery; Disconnecting and connecting battery.*

2.2 Safety precautions when working on vehicles with start/stop system

Please note the following when working on vehicles with start/stop system:



WARNING

Risk of injury due to automatic engine start on vehicles with start/stop system.

- ◆ *On vehicles with activated start/stop system (indicated by a message in the instrument cluster), the engine may start automatically if it needs to.*
- ◆ *Therefore it is important to ensure that the start/stop system is deactivated when performing repairs (switch off ignition, if required switch on ignition again).*

2.3 Safety precautions when using testers and measuring instruments during a road test

Observe the following precautions if test equipment has to be used when road-testing the vehicle.



WARNING

Accidents can be caused if the driver is distracted by test equipment or if test equipment is not secured.

Injuries can be caused if the passenger's airbag is triggered in a collision.

- *The use of test equipment while driving causes distraction.*
- *There is an increased risk of injury if test equipment is not secured.*
- ◆ *Always secure test equipment to the rear seat with a strap and have it operated from there by a second person.*

2.4 Safety precautions when working on subframe

Note the following when working on the subframe:



Caution

Risk of damage to parts of the running gear.

- ◆ *Do not let the vehicle down on the wheels if the gearbox mounting, steering rack or subframe cross brace are not properly installed.*
- ◆ *Do NOT support the vehicle at the subframe or the subframe cross brace (e.g. with a trolley jack).*

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2.5 Safety precautions when tow-starting and towing



Caution

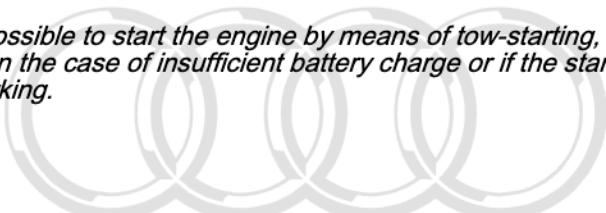
Risk of irreparable damage to gearbox.

- ◆ *When the vehicle is towed, the selector lever must be set to position "N" and the vehicle must not be towed for a distance of more than 50 km or at a speed in excess of 50 km/h.*



Note

It is not possible to start the engine by means of tow-starting, for instance in the case of insufficient battery charge or if the starter is not working.



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3 Repair instructions

- ⇒ "3.1 Rules for cleanliness", page 5
- ⇒ "3.2 General notes", page 5
- ⇒ "3.3 General repair instructions", page 6
- ⇒ "3.4 Contact corrosion", page 8
- ⇒ "3.5 Routing and attaching lines and wiring", page 9

3.1 Rules for cleanliness

- ◆ Thoroughly clean all joints and connections and the surrounding areas before disconnecting.
- ◆ Use cleaning fluid - D 009 401 04- to clean the gearbox and its components.
- ◆ Use commercially available lint-free cloths for cleaning, such as the "WYPALL X70 / WORKHORSE" cloth from Kimberly-Clark Professional.
- ◆ Seal off open lines and connections immediately with clean plugs or protective caps from engine bung set - VAS 6122- .
- ◆ After removal, place parts on a clean surface and cover them. Use sheeting or lint-free cloths.
- ◆ Carefully cover or seal open components if repairs cannot be carried out immediately.
- ◆ Only install clean components; replacement parts should only be unpacked immediately prior to installation.
- ◆ Protect unplugged electrical connectors against dirt and moisture and make sure connections are dry when attaching.

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3.2 General notes

Gearbox

- ◆ The 8-speed automatic gearbox 0BK, four-wheel drive, has eight hydraulically actuated forward gears. When the torque converter lock-up clutch closes, these forward gears act as mechanically driven gears since the slippage in the torque converter is prevented.
- ◆ A special feature of the 0BK gearbox is the location of the front final drive (front differential with flange shafts) in front of the torque converter. This allows for a more even weight distribution between the front and rear axles on the vehicle.
- ◆ For detailed information on the function of the gearbox refer to
⇒ Self-study programme No. 457 ; Audi A8 '10, Power transmission .

Torque converter

The torque converter is equipped with a lock-up clutch allowing controlled slip. Due to the new construction in this gearbox the torque converter is located behind the front final drive.

Mechatronic unit

The mechatronic unit incorporates the following components as a complete synchronised unit:

- ◆ Hydraulic control system, automatic gearbox control unit - J217-
- ◆ Sensors and actuators

The mechatronic unit is installed inside the gearbox in the ATF oil pan.

Automatic gearbox control unit - J217-

The control unit is part of the mechatronic unit in the gearbox.

The gear change points are calculated automatically (depending on the driving situation and the resistance to motion).

Advantages:

- ◆ Gear change points controlled for enhanced fuel economy
- ◆ Maximum engine output is always available
- ◆ Gear-change points are adapted individually in all driving situations
- ◆ Gear-change points are infinitely variable

Oil system for transfer box and final drive

Depending on engine version, gearboxes may have separate or common oil systems. Identification is only possible by using gearbox code letters

⇒ ["4.3 Allocation of gearbox to engine", page 12](#) .

On vehicles with a common oil system, the appropriate testing regulations MUST be adhered to as the oil level of the transfer box is dependent on the oil level of the front axle differential.

Variation of gear-change points for gradients

An additional gear change map automatically selects gear changes for gradients. The gear changes are selected according to accelerator pedal position and road speed.

- ◆ Gear change map for extreme uphill gradients is matched to engine output.
- ◆ Gear change map for extreme downhill gradients is matched to the braking effect of the engine.
- ◆ The driver can achieve an increased engine braking effect by directly selecting a specific gear via the tiptronic function, e.g. when towing a trailer on downhill gradients.

3.3 General repair instructions

Proper tools and the maximum possible care and cleanliness are essential for satisfactory repairs to the transmission units. The usual basic safety precautions also naturally apply when carrying out repair work.

To avoid repetition, a number of generally applicable instructions for the various repair procedures are summarised here. They apply to the work described in this Manual.

Guided Fault Finding, Vehicle self-diagnosis and Test Instruments

- ◆ Before servicing the gearbox, the exact cause of the failure must be determined using the functions [Guided Fault Finding](#), [Vehicle Self-diagnosis](#) and [Test Instruments](#)
⇒ Vehicle diagnostic tester.

Environmental and waste disposal regulations for oil

- ◆ ATF, gear oil and any other type of oil must be handled with care.
- ◆ Dispose of drained oil properly.
- ◆ Always adhere to statutory environmental and waste disposal regulations.

- ◆ Observe the information shown on the packaging of the oil.

Special tools

For a complete list of special tools used in this Workshop Manual
⇒ Workshop equipment and special tools

Gearbox

- ◆ Observe rules for cleanliness when working on gearbox
⇒ [page 5](#).
- ◆ The engine must not be run and the vehicle must not be towed if the centre differential housing has been removed or if there is no ATF in the gearbox.
- ◆ After installing, the following fluid levels must be checked and topped up if necessary: ATF in gearbox ⇒ [page 115](#) and gear oil in gearbox ⇒ [page 133](#). Capacities ⇒ [page 10](#), specifications ⇒ Electronic parts catalogue .

O-rings, oil seals and gaskets

- ◆ Always renew O-rings, oil seals and gaskets.
- ◆ After removing gaskets and seals, always inspect the contact surface on the housing or shaft for burrs resulting from removal or for other signs of damage.
- ◆ Thoroughly clean housing joint surfaces before assembling.
- ◆ Lightly lubricate the outer circumference and sealing lip of oil seals with ATF before installing.
- ◆ Lightly lubricate O-rings with ATF before installation to prevent them from being crushed during assembly.
- ◆ Use only ATF for parts running in ATF. Other lubricants will cause malfunction of the gearbox hydraulics.
- ◆ The open side of the oil seal should face the side containing the fluid.
- ◆ When installing a new oil seal, position the seal such that the sealing lip does not contact the shaft in the same place as the old seal (make use of installation depth tolerances).
- ◆ After installing, the following fluid levels must be checked and topped up if necessary: ATF in gearbox ⇒ [page 115](#) and gear oil in gearbox ⇒ [page 133](#). Capacities ⇒ [page 10](#), specifications ⇒ Electronic parts catalogue .

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Nuts, bolts

- ◆ Loosen bolts in reverse sequence to the specified tightening sequence.
- ◆ Bolts and nuts used to secure covers and housings must be tightened in steps according to the specified tightening sequence and method.
- ◆ Bolts and nuts which secure covers and housings should be loosened and tightened in diagonal sequence and in stages if no tightening sequence is specified.
- ◆ Tightening torques apply to non-lubricated bolts and nuts (unless specified otherwise).
- ◆ Renew self-locking nuts and bolts.
- ◆ Use a wire brush to clean the threads of bolts which are secured with locking fluid. Then apply locking fluid - AMV 185 101 A1- to bolt threads before installing.
- ◆ Threaded holes which take self-locking bolts or bolts coated with locking fluid must be cleaned (using a tap or similar). Oth-

erwise there is a danger of the bolts shearing off the next time they are removed.

Locking elements

- ◆ Do not over-stretch circlips.
- ◆ Renew circlips which have been damaged or over-tensioned.
- ◆ Circlips must be properly seated in the base of the groove.

Bearings

- ◆ Install needle bearings so the lettering (side with thicker metal) faces towards the installing tool.
- ◆ Lubricate bearings with gear oil or ATF, depending on fitting location.
- ◆ Do not interchange inner or outer races of bearings of the same size.
- ◆ Always renew the tapered roller bearings on one shaft together and use new bearings from a single manufacturer.

Shims

- ◆ Use a micrometer to measure the shims at several points. Different shim thicknesses make it possible to obtain the exact shim thickness required; if necessary, fit 2 shims.
- ◆ Check for burrs and damage. Install only shims which are in perfect condition.

Mechatronic unit



Caution

The gearbox control unit (mechatronic unit) can be damaged by electrostatic discharge.

- ◆ *Before handling the electrical connector or mechatronic unit, the mechanic must discharge static. To do so, touch an earthed metal object, such as a heater radiator or lifting platform, with your hand.*
- ◆ *Do not touch contact pins in gearbox connector with bare hands.*

3.4 Contact corrosion

Contact corrosion can occur if unsuitable fasteners are used (e.g. bolts, nuts, washers, etc.).

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For this reason, only fasteners with a special surface coating are fitted.

Rubber or plastic parts and adhesives also consist of non-conductive materials.

If you are not sure whether used parts can be re-installed, always fit new parts ⇒ Electronic parts catalogue .

Please note:

- ◆ Use only genuine spare parts: these have been fully tested and are compatible with aluminium.
- ◆ We recommend the use of accessories approved by Audi.
- ◆ Damage caused by contact corrosion is not covered by warranty.

3.5 Routing and attaching lines and wiring

- ◆ Mark fuel lines, vacuum lines, pipes/hoses for activated charcoal filter system and electrical wiring etc. before removal so they can be re-installed in the original positions and correctly connected. If necessary, make sketches or take photographs.
- ◆ To avoid damaging pipes, hoses and wiring, ensure sufficient clearance from all moving or hot components in engine compartment (limited space in engine compartment).



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4 Technical data

- ⇒ ["4.1 Capacities", page 10](#)
- ⇒ ["4.2 Oil distribution", page 12](#)
- ⇒ ["4.3 Allocation of gearbox to engine", page 12](#)
- ⇒ ["4.4 Clutch logic", page 13](#)

4.1 Capacities

- ⇒ ["4.1.1 Capacities - ATF section in gearbox", page 10](#)
- ⇒ ["4.1.2 Capacities - front final drive \(gearbox with separate oil systems\)", page 10](#)
- ⇒ ["4.1.3 Capacities - transfer box \(gearbox with separate oil systems\)", page 11](#)
- ⇒ ["4.1.4 Capacities - gearbox with common oil system", page 11](#)

4.1.1 Capacities - ATF section in gearbox

Capacities	Automatic gearbox 0BK
Initial filling by manufacturer	Approx. 8.6 ltr.
Fluid filling after gearbox has been drained in workshop	3.6 to 4.0 ltr. Fluid change capacity can vary according to engine version
Fluid change	<ul style="list-style-type: none"> ◆ No change required ◆ Life filling; change only after repair, e.g. if ATF oil pan has been removed
Lubricant	ATF specifications for automatic gearbox 0BK ⇒ Electronic parts catalogue



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- ◆ Use only the ATF supplied as a replacement part for automatic gearbox 0BK ⇒ Electronic parts catalogue .

- ◆ ⇒ ["7.1 Checking ATF level", page 115](#)
- ◆ ⇒ ["7.2 Draining and filling ATF", page 118](#)

4.1.2 Capacities - front final drive (gearbox with separate oil systems)

Allocation ⇒ [page 12](#)

Capacities	Automatic gearbox 0BK
Initial filling	1.0 ltr
Oil filling after oil has been drained in workshop	Approx. 0.9 ltr.
Oil change	<ul style="list-style-type: none"> ◆ No change required ◆ Lifetime filling; change only after repairs, e.g. if cover for front final drive has been removed
Lubricant	Gear oil for automatic gearbox 0BK ⇒ Electronic parts catalogue

- ◆ ⇒ ["2.2.1 Checking gear oil level - front final drive \(gearbox with separate oil systems\)"](#), page 133
- ◆ ⇒ ["2.3.1 Draining and filling gear oil - front final drive \(gearbox with separate oil systems\)"](#), page 142

4.1.3 Capacities - transfer box (gearbox with separate oil systems)

Allocation [⇒ page 12](#)

Capacities	Automatic gearbox 0BK
Initial filling	1.0 ltr
Oil filling after oil has been drained in workshop	Approx. 0.8 ltr.
Oil change	<ul style="list-style-type: none"> ◆ No change required ◆ Lifetime filling; change only after repairs, e.g. if centre differential housing has been removed
Lubricant	Gear oil for automatic gearbox 0BK ⇒ Electronic parts catalogue

- ◆ ⇒ ["2.2.2 Checking gear oil level - transfer box \(gearbox with separate oil systems\)"](#), page 136
- ◆ ⇒ ["2.3.2 Draining and filling gear oil - transfer box \(gearbox with separate oil systems\)"](#), page 145

4.1.4 Capacities - gearbox with common oil system

Allocation [⇒ page 12](#)

Capacities	Automatic gearbox 0BK
Initial filling	2.0 ltr.
Oil change	<ul style="list-style-type: none"> ◆ No change required ◆ Lifetime filling; change only after repairs, e.g. if cover for front final drive or centre differential housing has been removed
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- ◆ ⇒ ["2.2.3 Checking gear oil level - gearbox with common oil system"](#), page 138
- ◆ ⇒ ["2.3.3 Draining and filling gear oil - gearbox with common oil system"](#), page 148

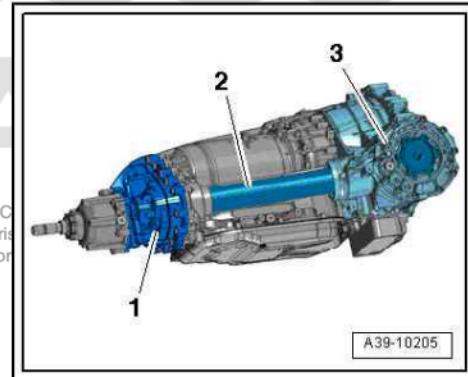
4.2 Oil distribution

Gearbox with separate oil systems

- ◆ There is no oil in the protective tube -2-; the transfer box -1- and front final drive -3- are each separated from the side shaft by an oil seal.
- ◆ Allocation [⇒ page 12](#).

Gearbox with common oil system

- ◆ The oil chambers in the front final drive -3- and the transfer box -1- are interconnected by means of the protective tube -2-.
- ◆ The side shaft runs in gear oil in the protective tube.
- ◆ Allocation [⇒ page 12](#).



4.3 Allocation of gearbox to engine

The following data can be found in the ⇒ Electronic parts catalogue .

- ◆ Date of manufacture
- ◆ Allocation of mechatronic unit and software for automatic gearbox control unit - J217-
- ◆ Correct type of flange shafts
- ◆ Correct type of rear final drive according to code letters and PR number

Automatic gearbox		0BK four-wheel drive		
Gearbox	Code letters	NEU, NNT, NXT	NGR	NVF
Torque convert- er	Code letters	Y137	A138	G141
Allocation	Model	Audi A6 2011 ► Audi A7 2011 ► USA and Canada, South Korea	Audi A6 2011 ► Audi A7 2011 ► USA and Canada	Audi A6 2011 ► Audi A7 2011 ►
	Engine	3.0 ltr. TFSI - 228 kW	2.0 ltr. TFSI - 155 kW	3.0 ltr. TDI biturbo - 221 kW
Primary drive		25 : 29 = 0.862	27 : 29 = 0.931	27 : 35 = 0.771
Spur gear drive to front axle		31 : 29 = 1.069	31 : 29 = 1.069	30 : 31 = 0.968
Front axle bevel gearing		34 : 11 = 3.091	34 : 11 = 3.091	35 : 11 = 3.182
Overall front drive ratio = Primary drive x spur gear drive x bevel gearing		2.848	3.076	2.375
Rear axle bevel gearing		43 : 13 = 3.308	43 : 13 = 3.308	37 : 12 = 3.083
Overall rear drive ratio = Rear axle bevel gearing x primary drive		2.851	3.080	2.379
Oil filling in front final drive/transfer box		Separate	Separate	Common

Automatic gearbox		0BK four-wheel drive		
Gearbox	Code letters	NVG	NZP	NPV, PTT
Torque convert- er	Code letters	G141	V135	N140
Allocation	Model	Audi A6 2011 ► allroad	Audi A7 2011 ►	Audi A6 2011 ► RS 6

Automatic gearbox	0BK four-wheel drive		
Engine	3.0 ltr. TDI biturbo - 230 kW	3.0 ltr. TDI - 180 kW	4.0 ltr. TFSI - 412 kW
Primary drive	27 : 33 = 0.818	27 : 33 = 0.818	27 : 29 = 0.931
Spur gear drive to front axle	30 : 31 = 0.968	30 : 31 = 0.968	31 : 29 = 1.069
Front axle bevel gearing	35 : 11 = 3.182	35 : 11 = 3.182	34 : 11 = 3.091
Overall front drive ratio = Primary drive x spur gear drive x bevel gearing	2.519	2.519	3.076
Rear axle bevel gearing	37 : 12 = 3.083	37 : 12 = 3.083	43 : 13 = 3.308
Overall rear drive ratio = Rear axle bevel gearing x primary drive	2.523	2.523	3.080
Oil filling in front final drive/transfer box	Common	Separate	Common

Automatic gearbox	0BK four-wheel drive		
Gearbox	Code letters	PDC	
Torque convert-	Code letters	F166	
Allocation	Model	Audi A6 2011 ► Audi A7 2011 ► USA	
Engine	3.0 ltr. TDI - 176 kW		
Primary drive	27 : 33 = 0.818		
Spur gear drive to front axle	30 : 31 = 0.968		
Front axle bevel gearing	35 : 11 = 3.182		
Overall front drive ratio = Primary drive x spur gear drive x bevel gearing	2.519		
Rear axle bevel gearing	37 : 12 = 3.083		
Overall rear drive ratio = Rear axle bevel gearing x primary drive	2.523		
Oil filling in front final drive/transfer box	Separate		

4.4 Clutch logic

Gear	Brake		Clutch		
	A	B	C	D	E
1	x	x	x	-	-
2	x	x	-	-	x
3	-	x	x	-	x
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5	-	x	x	x	-
6	-	-	x	x	x
7	x	-	x	x	-
8	x	-	-	x	x
R	x	x	-	x	-

Gear	Brake		Clutch		
	A	B	C	D	E
• x = Brake/clutch active					
• - = Brake/clutch not active					



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5 Transmission layout

⇒ "5.1 Transmission layout - four-wheel drive", page 15

5.1 Transmission layout - four-wheel drive

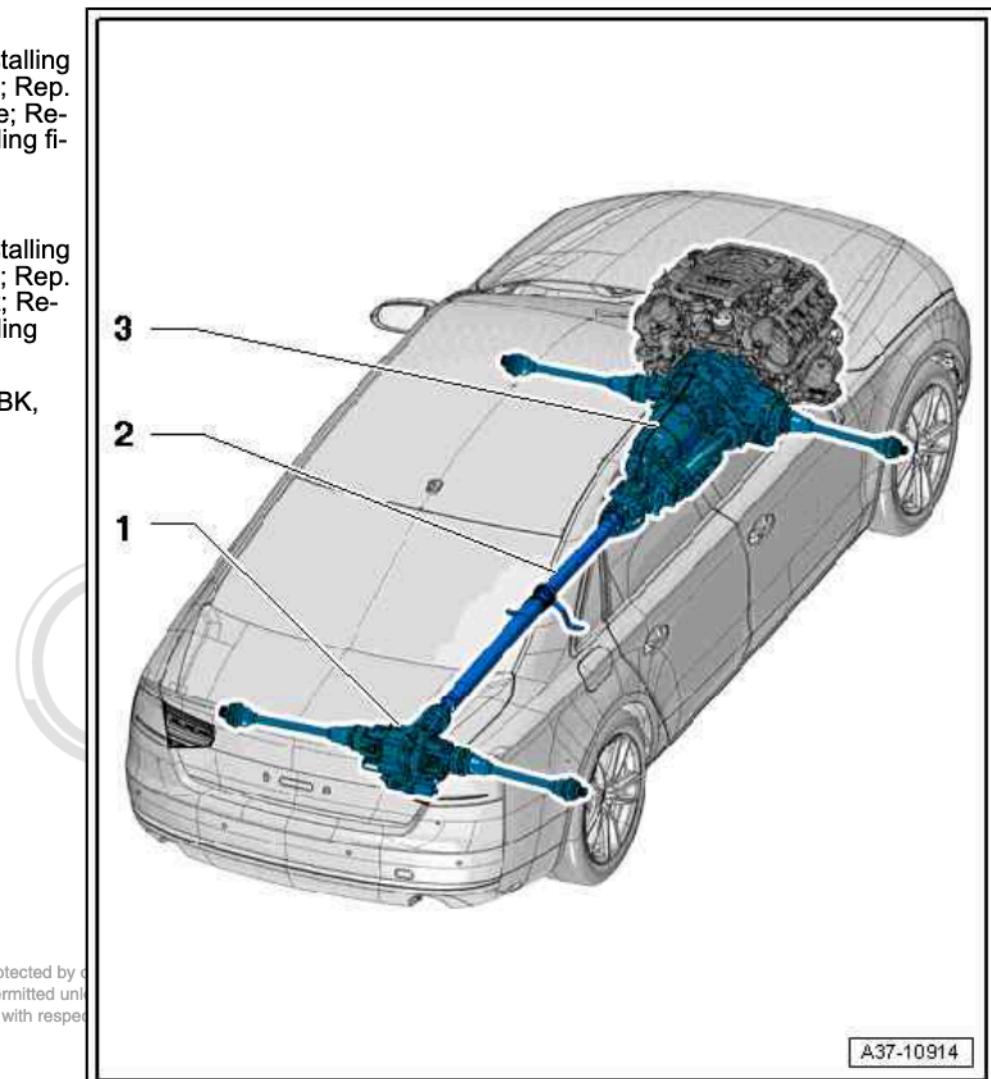
1 - Rear final drive

- Removing and installing
⇒ Rear final drive; Rep. gr. 39 ; Final drive; Removing and installing final drive

2 - Propshaft

- Removing and installing
⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft

3 - Automatic gearbox 0BK, four-wheel drive



32 – Torque converter

1 Torque converter

For all torque converter procedures, refer to ⇒ Servicing 8-speed automatic gearbox; Rep. gr. 32 ; Torque converter .



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37 – Controls, housing

1 Selector mechanism

- ⇒ ["1.1 Exploded view - selector lever handle", page 17](#)
- ⇒ ["1.2 Exploded view - selector mechanism", page 19](#)
- ⇒ ["1.3 Exploded view - selector lever cable", page 21](#)
- ⇒ ["1.4 Manual release from position P", page 22](#)
- ⇒ ["1.5 Removing and installing selector lever handle", page 22](#)
- ⇒ ["1.6 Bringing interlock button in handle into installation position", page 27](#)
- ⇒ ["1.7 Removing and installing selector mechanism", page 29](#)
- ⇒ ["1.8 Checking selector mechanism", page 34](#)
- ⇒ ["1.9 Removing and installing selector lever cable", page 37](#)
- ⇒ ["1.10 Checking and adjusting selector lever cable", page 41](#)
- ⇒ ["1.11 Removing and installing selector lever lock solenoid N110", page 45](#)
- ⇒ ["1.12 Removing and installing selector lever sensors control unit J587", page 47](#)
- ⇒ ["1.13 Removing and installing gear selector position P switch F305", page 48](#)
- ⇒ ["1.14 Renewing selector shaft oil seal", page 48](#)

1.1 Exploded view - selector lever handle

- ⇒ ["1.1.1 Exploded view - selector lever handle \(with interlock button on side\)", page 17](#)
- ⇒ ["1.1.2 Exploded view - selector lever handle \(with interlock button on front\)", page 19](#)

1.1.1 Exploded view - selector lever handle (with interlock button on side)



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1 - Selector lever position display - Y26-

- Removing and installing
⇒ Electrical system;
Rep. gr. 96 ; Lights; Removing and installing selector lever position display - Y26-

2 - Multimedia system operating unit - E380-

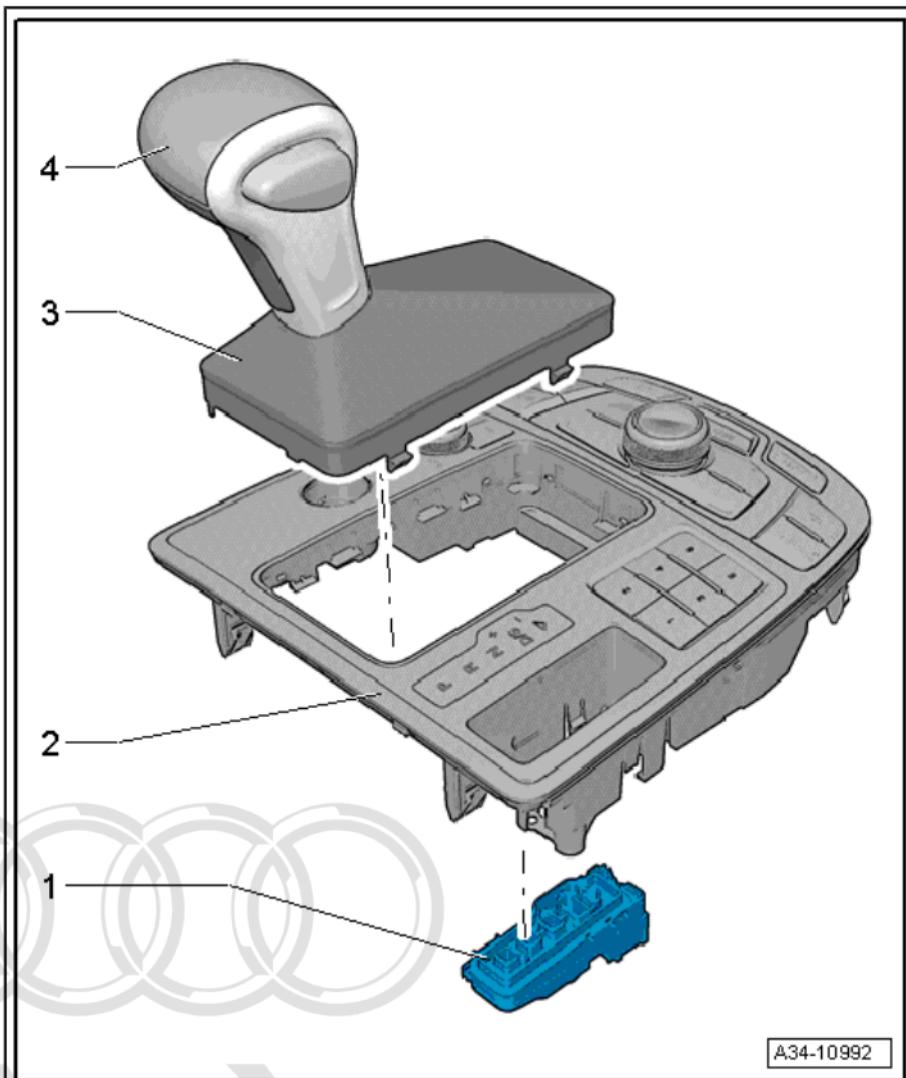
- Removing and installing
⇒ Communication;
Rep. gr. 91 ; Infotainment system; Removing and installing multimedia system operating unit - E380-

3 - Selector lever boot

- Remove and install together with selector lever handle [⇒ page 22](#)

4 - Selector lever handle

- Removing and installing
[⇒ page 22](#)



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1.1.2 Exploded view - selector lever handle (with interlock button on front)

1 - Selector lever position display - Y26-

- Removing and installing
⇒ Electrical system;
Rep. gr. 96 ; Lights; Removing and installing selector lever position display - Y26-

2 - Multimedia system operating unit - E380-

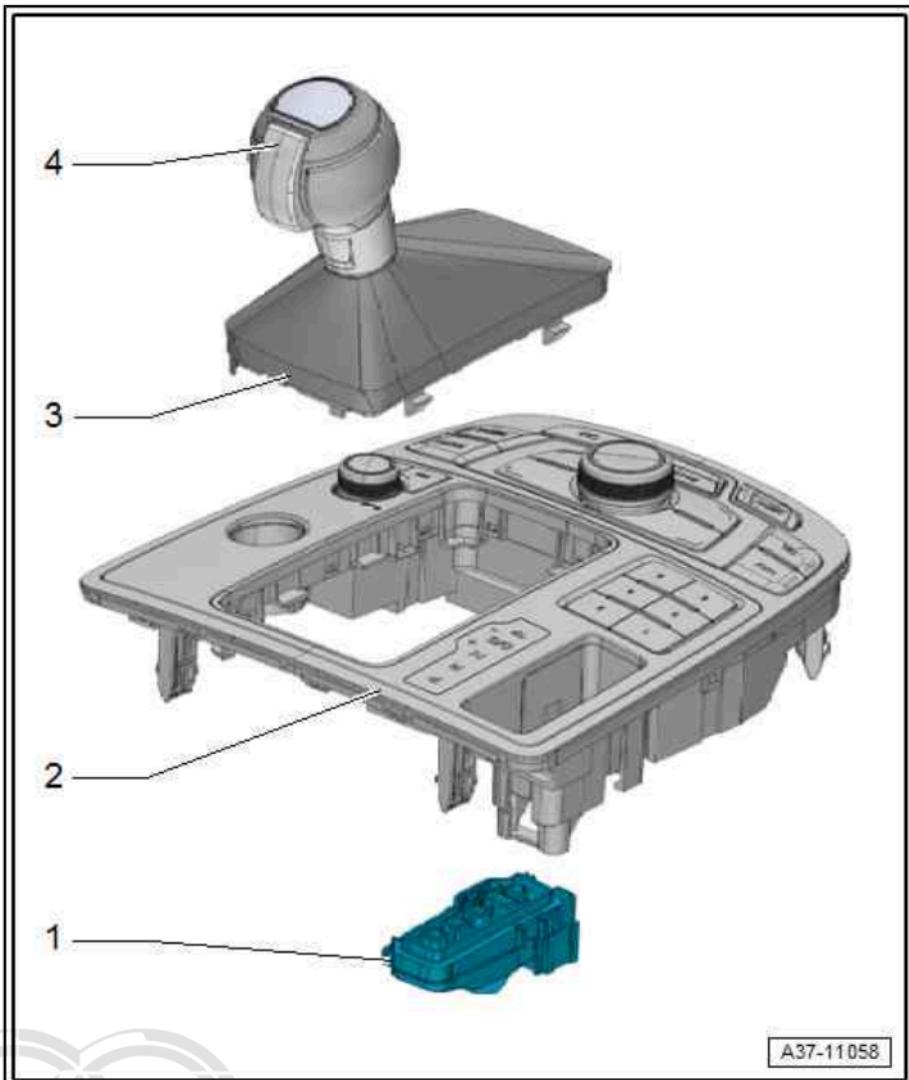
- Removing and installing
⇒ Communication;
Rep. gr. 91 ; Infotainment system; Removing and installing multimedia system operating unit - E380-

3 - Selector lever boot

- Remove and install together with selector lever handle [⇒ page 25](#)

4 - Selector lever handle

- Removing and installing
[⇒ page 25](#)



1.2 Exploded view - selector mechanism



WARNING

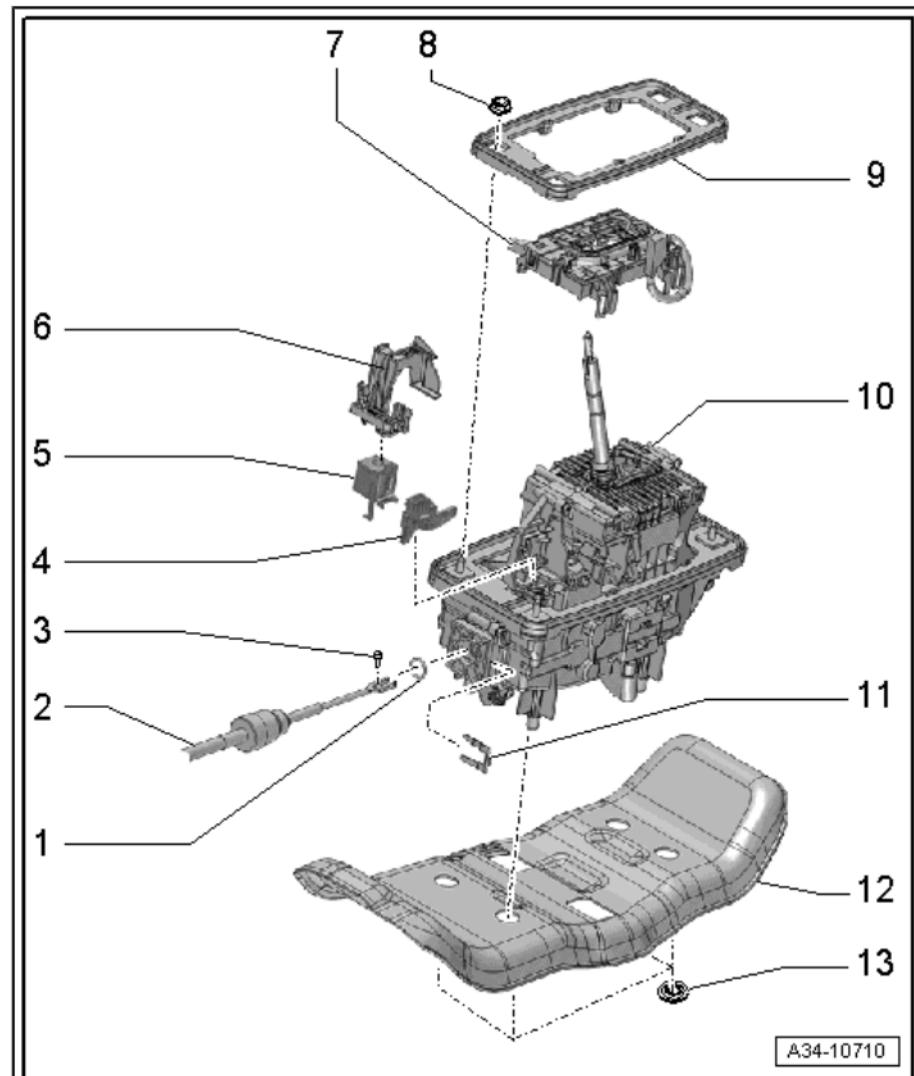
Accidents and injury can be caused if a gear is inadvertently engaged while the engine is running.

- ◆ *Prior to performing work with engine running, move selector lever to position "P" and pull up parking brake button to apply the electromechanical parking brake.*

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Check selector mechanism before dismantling [⇒ page 34](#).

- 1 - O-ring
 - Renew
- 2 - Selector lever cable
 - Do not bend or kink
 - Exploded view
⇒ [page 21](#)
- 3 - Bolt
 - For adjusting selector lever cable
 - Tightening torque
⇒ [Item 5 \(page 21\)](#)
- 4 - Gear selector position P switch - F305-
 - Consists of two reed contacts on printed circuit board in selector lever lock solenoid - N110-
 - Removing and installing
⇒ [page 48](#)
- 5 - Selector lever lock solenoid - N110-
 - Removing and installing
⇒ [page 45](#)
- 6 - Sealing cap
 - Above selector lever lock solenoid - N110-
- 7 - Selector lever sensors control unit - J587- and tiptronic switch - F189-
 - Removing and installing
⇒ [page 47](#)



- 8 - Nut
 - Secures selector mechanism to body
 - 4x
 - 8 Nm

9 - Gasket

- 10 - Shift unit
 - Can only be renewed as a complete unit
 - Removing and installing ⇒ [page 29](#)

- 11 - Retaining clip
 - For selector lever cable

- 12 - Noise insulation
 - Not fitted on all vehicles
 - For correct version, refer to ⇒ [Electronic parts catalogue](#)

13 - Retaining washers

- For noise insulation

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- 4x
- Renew

1.3 Exploded view - selector lever cable

1 - Retaining clip

- For selector lever cable
- Renew

2 - Bolt

- 2x
- 8 Nm

3 - Selector lever cable

- Do not bend or kink
- Removing and installing [⇒ page 37](#)
- Selector lever cable must be renewed if rubber sleeve is damaged
- Before installing, lightly lubricate ball socket with polycarbamide grease - G 052 142 A2- .
- When installing, make sure that rubber sleeve on gearbox end is not twisted
- Adjusting [⇒ page 41](#)
- Adjusting to basic setting [⇒ page 42](#)

4 - Cable support bracket

5 - Bolt

- For adjusting selector lever cable
- Secured to shift unit
- 13 Nm

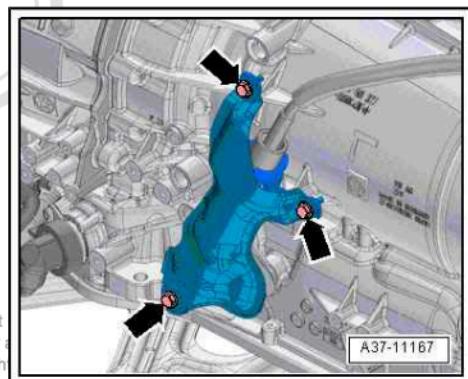
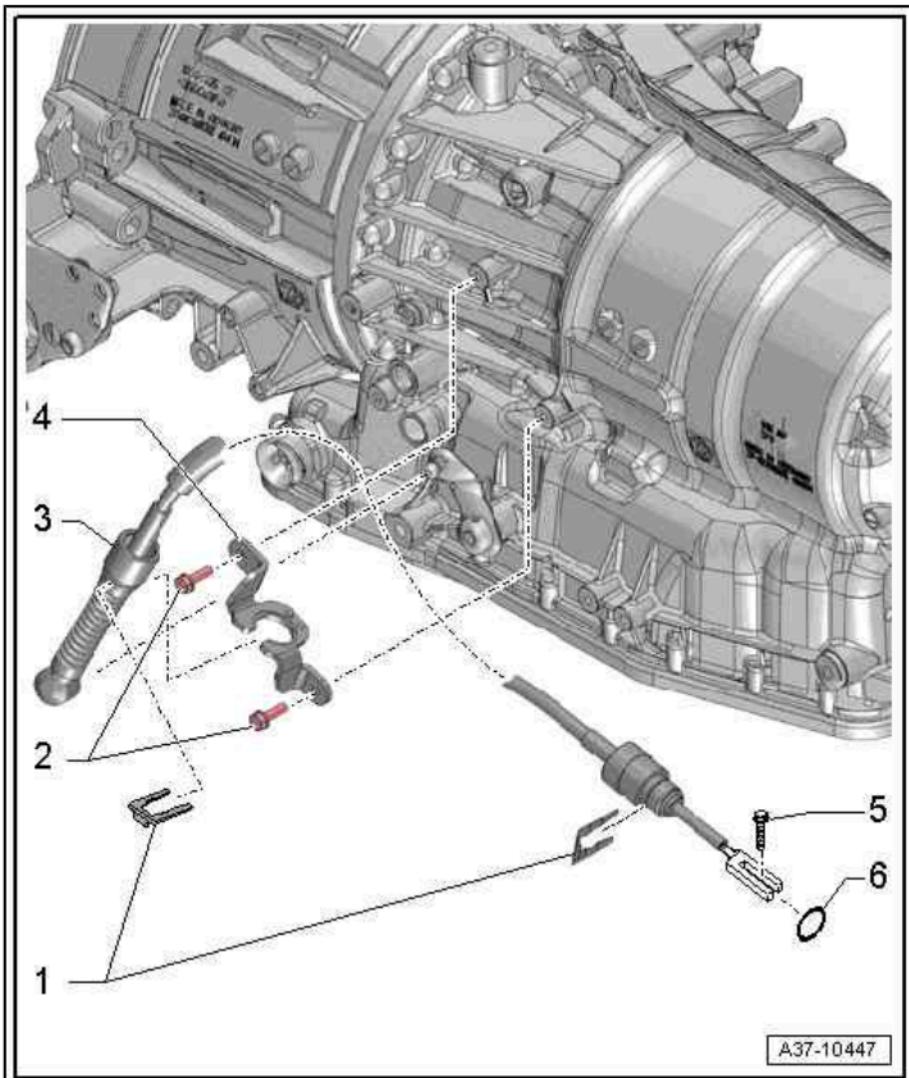
6 - O-ring

- Renew

7 - Gearbox selector lever

Heat shield - tightening torque

- Bolts -top arrows-: 9 Nm.
- Bolt -bottom arrow-: 20 Nm.



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1.4 Manual release from position P



Note

- ◆ If the battery is disconnected or discharged, the selector lever cannot be shifted from position "P". In this case, the vehicle cannot be pushed or towed.
- ◆ When you operate the manual release mechanism the selector lever lock solenoid - N110- will release the lock without current supply.

Procedure

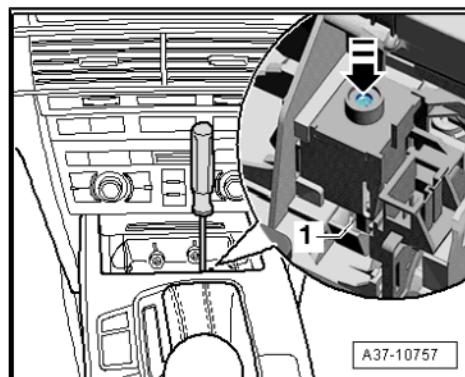
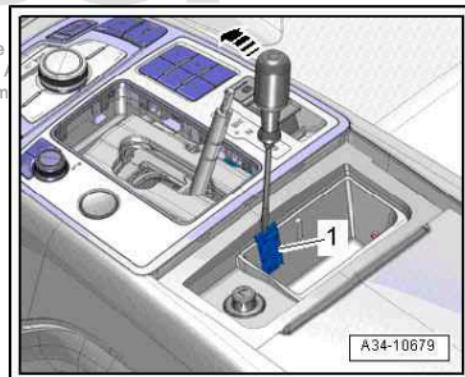


Note

The selector lever handle is removed in the illustration. The handle does not have to be removed in order to manually release the selector mechanism from position "P".

- If fitted, remove front ashtray insert.
- Use screwdriver to pry off cover cap -1- in ashtray housing/storage tray -arrow-.
- Carefully insert tool (e.g. screwdriver from tool kit) through centre opening in ashtray housing and into cylinder -arrow- on selector lever lock solenoid - N110- and at the same time press and hold interlock button and move selector lever out of position "P".

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Note

- ◆ This releases the selector lever lock in position "P" by way of the locking lever -1-.
- ◆ The cylinder -arrow- on selector lever lock solenoid - N110- may be partially concealed by noise insulation or wiring (move clear to one side).

1.5 Removing and installing selector lever handle

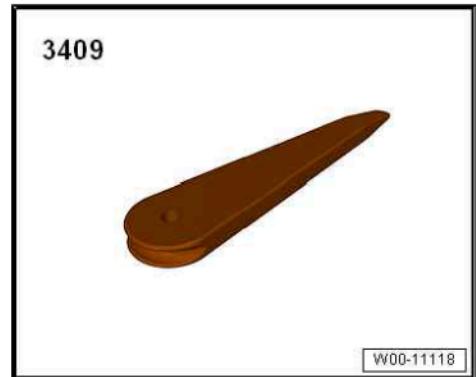
⇒ ["1.5.1 Removing and installing selector lever handle \(with interlock button on side\)", page 22](#)

⇒ ["1.5.2 Removing and installing selector lever handle \(with interlock button on front\)", page 25](#)

1.5.1 Removing and installing selector lever handle (with interlock button on side)

Special tools and workshop equipment required

◆ Removal wedge - 3409-



- ◆ Thin cable tie or assembly aid for interlock button on handle.
 A new selector lever handle is supplied with the assembly aid pre-fitted.

Removing

- Pull up parking brake button to apply electromechanical parking brake.
- Shift selector lever into position "N".

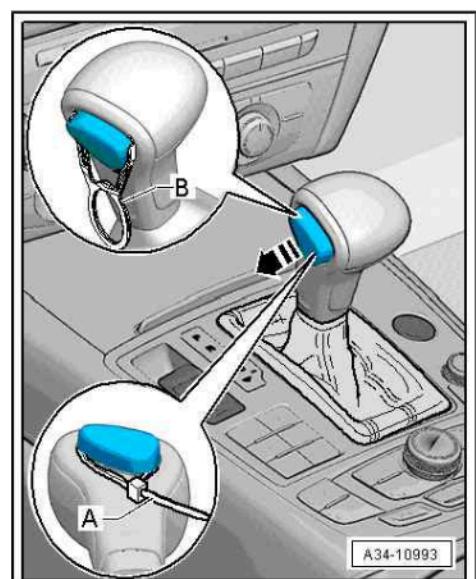
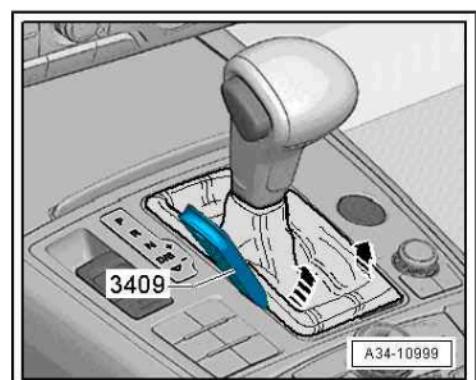


The selector lever handle is removed together with the selector lever boot.

- Carefully pry out selector lever boot at the sides in direction of -arrows- using removal wedge - 3409- .
- Pull out interlock button on selector lever handle -arrow- and secure in this position using cable tie -A- or assembly aid -B- as shown in illustration.

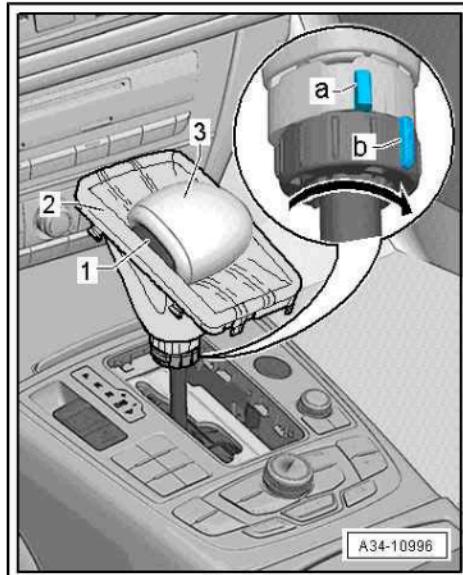


The assembly aid -B- is pre-fitted at the factory on a new selector lever handle. The assembly aid must not be removed until the new handle has been installed. This assembly aid can then be kept for future use as a locking tool.



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- Turn selector lever boot -2- inside out over selector lever handle -3-.
- Turn locking ring as far as stop in direction of -arrow- so that markings -a- and -b- are no longer in line.
- Pull off selector lever handle together with selector lever boot, taking care not to touch interlock button -1-.



Installing

- When installing the selector lever handle, the interlock button must be pulled out to the stop and secured with either a cable tie -A- or with the assembly aid -B- supplied together with the new handle.

If the interlock button was not properly secured when the handle was removed, and has dropped inside the handle, it must be pulled out and secured as described below before it can be installed.

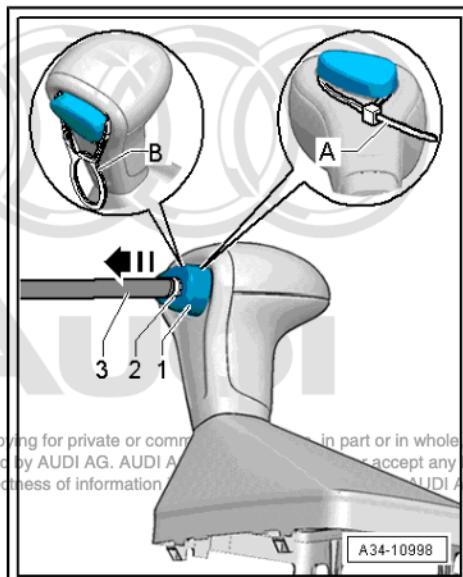
- Affix adhesive pad or double-sided adhesive tape -2- to interlock button -1- on selector lever handle.

Note

- ◆ Alternatively, a small suction cup can also be used (approx. 15 mm dia., commercially available).
- ◆ The adhesive pad or double-sided adhesive tape must be completely removed after installing the handle.

- Press a suitable tool -3- with clean, flat surface onto adhesive surface as shown in illustration and pull out interlock button by this means -arrow-.
- Secure interlock button in pulled-out position using cable tie -A- or assembly aid -B-, as shown in illustration.
- Remove adhesive pad or double-sided adhesive tape -2- and clean interlock button -1-.

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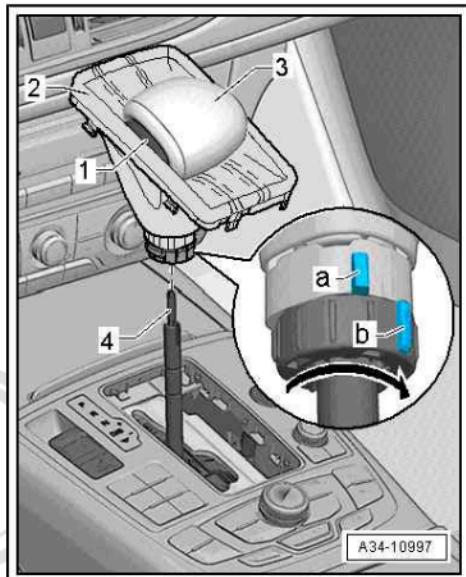
- Shift selector lever into position “N”.



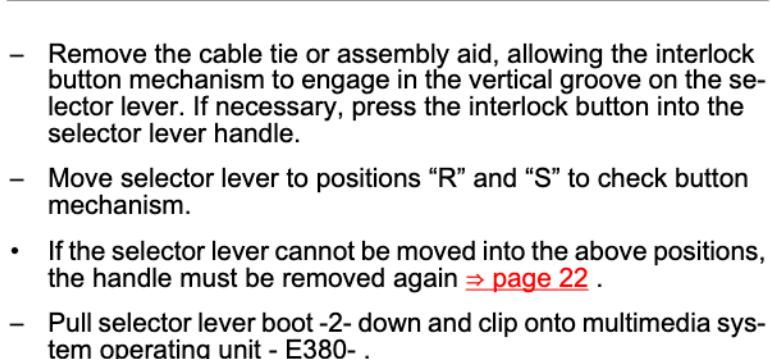
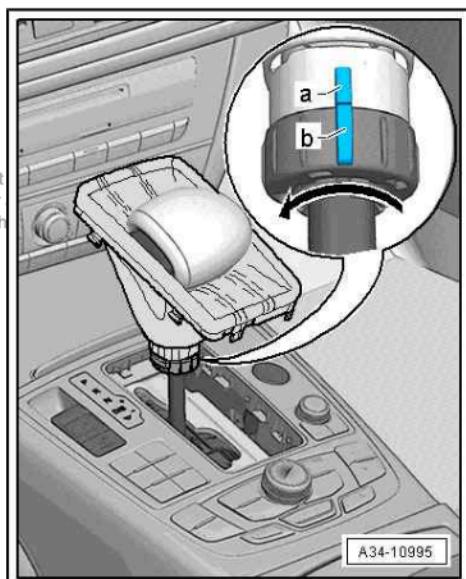
Note

The selector lever can be moved by pulling the release rod -4-

- Turn selector lever boot -2- inside out over selector lever handle -3-.
- Turn locking ring as far as stop in direction of -arrow- so that markings -a- and -b- are no longer in line.
- Push selector lever handle on with interlock button facing driver's side so that catch engages.



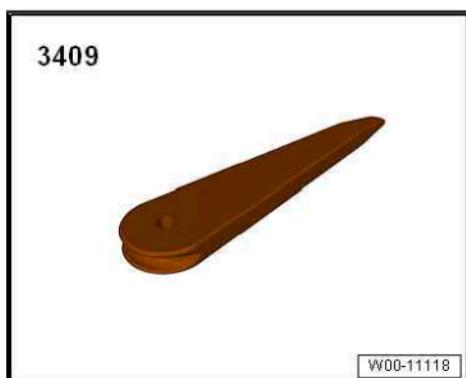
- Turn locking ring in direction of -arrow- until it engages; markings -a- and -b- should be in line.



1.5.2 Removing and installing selector lever handle (with interlock button on front)

Special tools and workshop equipment required

◆ Removal wedge - 3409-



- ◆ Thin cable tie or assembly aid for interlock button on handle.
 A new selector lever handle is supplied with the assembly aid pre-fitted.

Removing

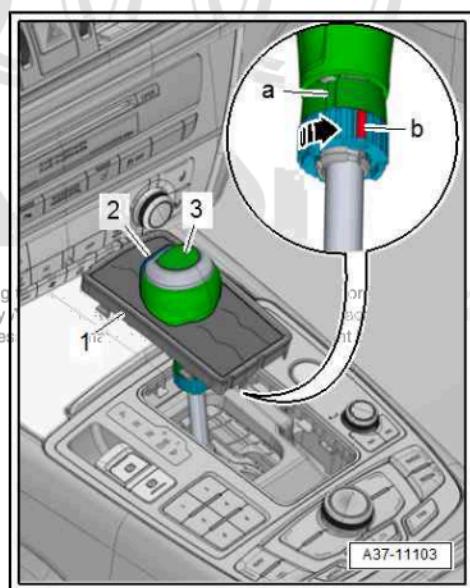
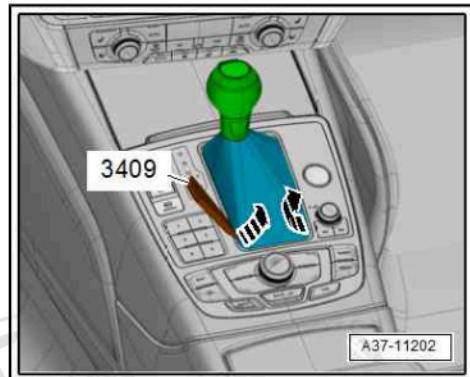
- Pull up parking brake button to apply electromechanical parking brake.
- Shift selector lever into position "N".



Note

The selector lever handle is removed together with the selector lever boot.

- Carefully pry out selector lever boot at the sides in direction of -arrows- using removal wedge - 3409- .
- Turn selector lever boot -1- inside out over selector lever handle -3-.
- Turn locking ring as far as stop in direction of -arrow- so that markings -a- and -b- are no longer in line.
- Pull off selector lever handle -3- together with selector lever boot -1-, taking care not to touch interlock button -2-.



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Installing

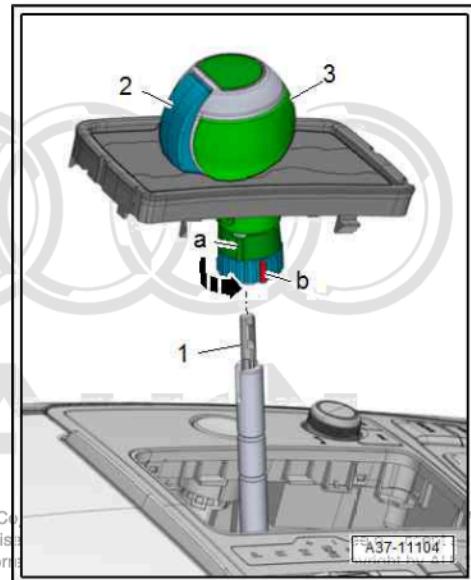
- Turn locking ring in direction of -arrow- as far as stop.
- Markings -a- and -b- should not be in line.
- Interlock button faces direction of travel.



Caution

Risk of damage to the selector mechanism.

- ◆ *The interlock button -2- must protrude from the selector lever handle during installation. If the interlock button was pressed in by mistake when the handle was removed, the interlock button must be moved back to its installation position [⇒ page 27](#).*
- ◆ *If the interlock button has been pressed in and the handle is installed with the interlock button in this position, the handle and the pull rod of the selector mechanism -1- will be damaged irreparably.*

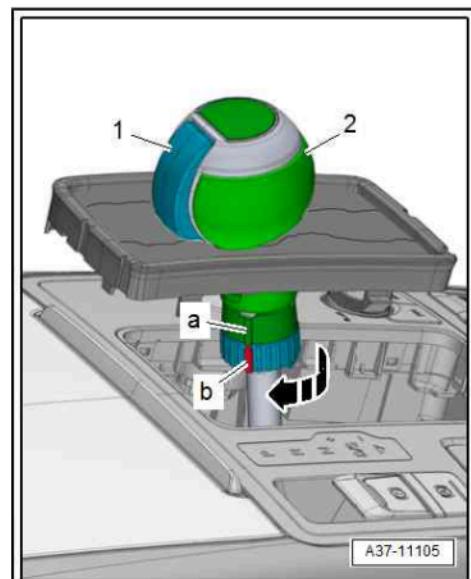


- Carefully press selector lever handle -3- fully onto selector lever, taking care not to touch interlock button -2-.
- The handle must engage in the annular groove on the selector lever.
- Turn locking ring in direction of -arrow- as far as stop.
- It must be possible to turn the locking ring; press handle -2- if necessary.
- Markings -a- and -b- should be in line.



Note

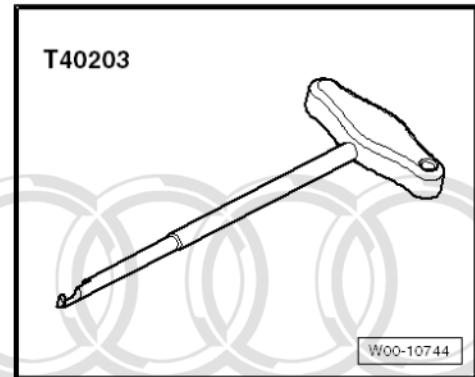
- ◆ *The handle is not locked until the locking ring has been turned. Only then should you press the interlock button on the handle.*
- ◆ *There may be increased resistance when you press the interlock button for the first time after installation.*
- Press interlock button -1- on selector lever handle.
- Move selector lever to positions "R" and "D/S" to check button mechanism.
- If the selector lever cannot be moved into the above positions, the handle must be removed again [⇒ page 25](#) .
- Pull selector lever boot down and clip onto multimedia system operating unit - E380- .



1.6 Bringing interlock button in handle into installation position

Special tools and workshop equipment required

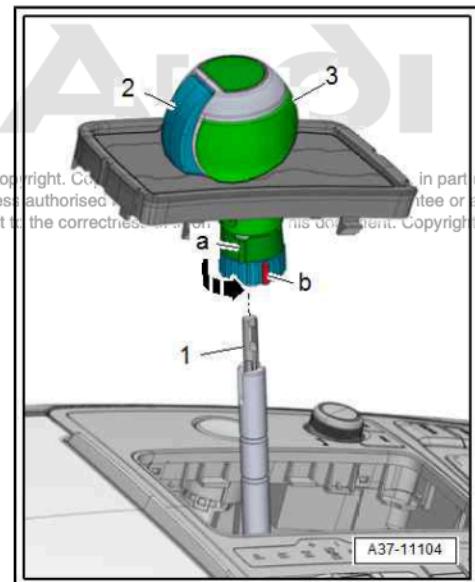
◆ Release tool - T40203-



Procedure

- Installation position: The interlock button -2- must protrude from the selector lever handle.

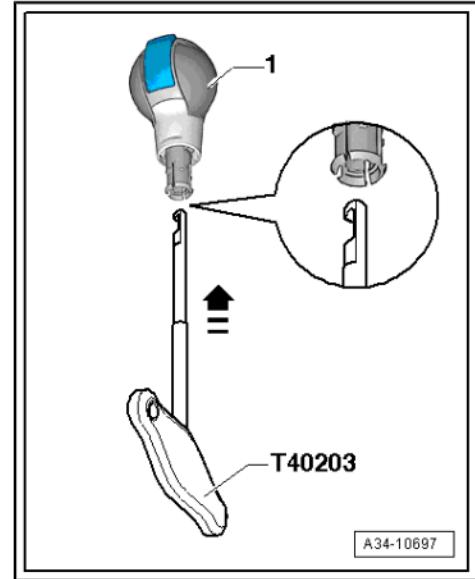
If the interlock button has been pressed in, it must be moved back into its installation position so that the selector lever handle -3- can be installed.



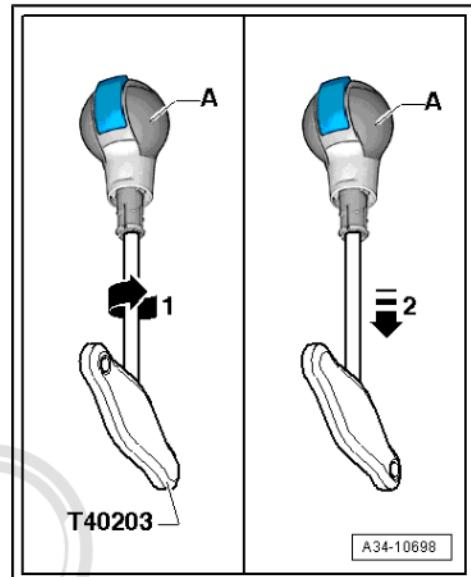
 Note

For illustration purposes, the handle is shown without the selector lever boot in the following steps.

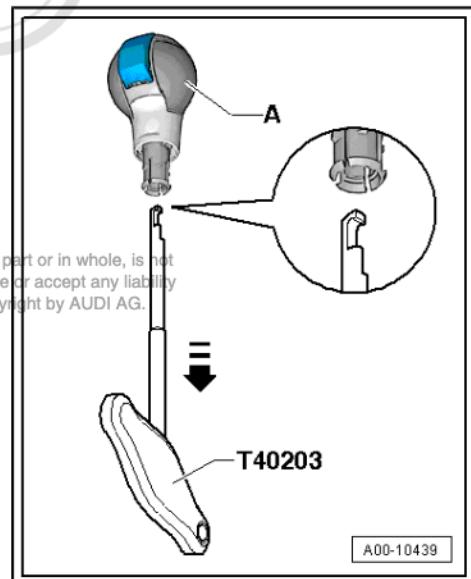
- Carefully insert release tool - T40203- into selector lever handle -1- as far as stop.
- Recess on release tool - T40203- should face interlock button, hook should point towards left.



- Hold selector lever handle -A- and turn release tool - T40203- 180° in direction of -arrow 1-.
- Hold handle and carefully pull out release tool - T40203- -arrow 2-.



- When pulling out release tool - T40203- , interlock button -A- on selector lever handle is pressed out and locked in position.
- Do not touch interlock button on selector lever handle before installing handle so that interlock button is not pressed in again.

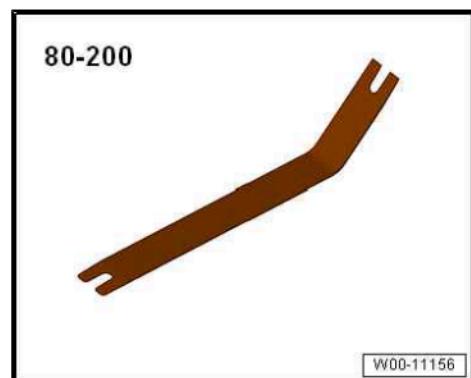


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1.7 Removing and installing selector mechanism

Special tools and workshop equipment required

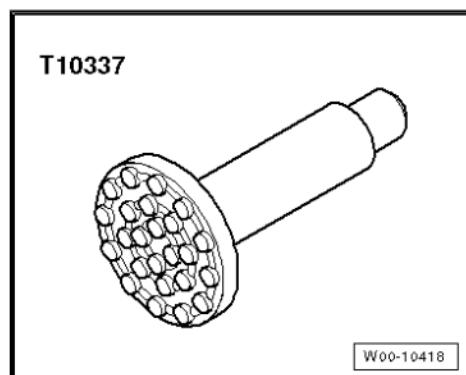
- ◆ Removal lever - 80 - 200-



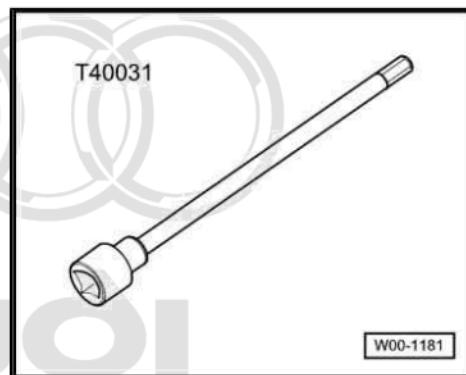
- ◆ Engine and gearbox jack - V.A.G 1383 A-



- ◆ Gearbox support - T10337-



- ◆ Socket - T40031-



Removing

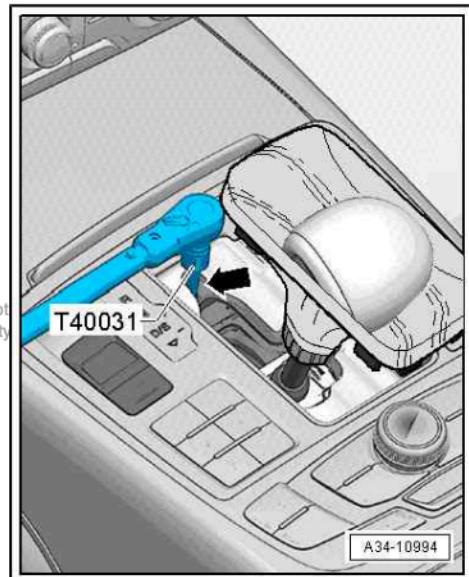
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- Remove selector lever handle [⇒ page 22](#).
- Remove front ashtray or storage compartment ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Exploded view - centre console .
- Shift selector lever to position "D/S".

- Insert socket and key - T40031- through access hole -arrow- in selector mechanism and slacken bolt on selector lever cable approx. one turn.



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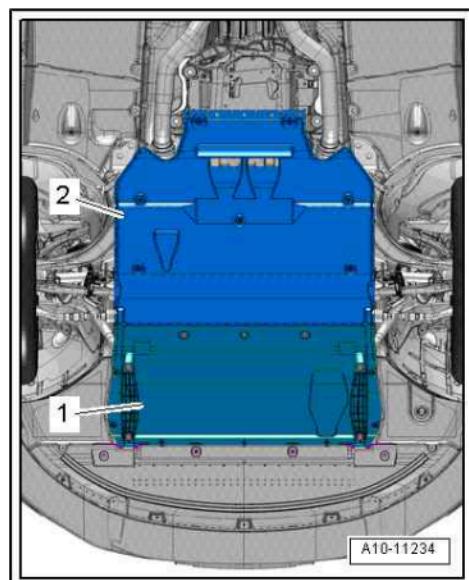
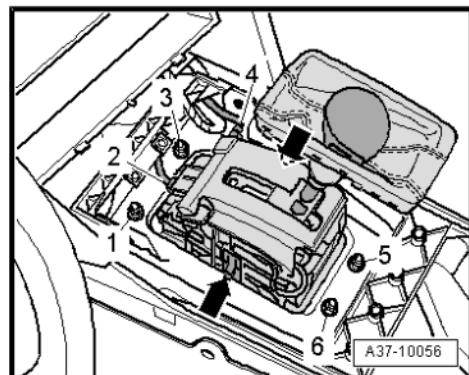


- Unplug electrical connectors -2- and -4-.



Note

- ◆ *Insulating mat is not shown in illustration.*
- ◆ *The assistance of a second mechanic is required to detach the selector mechanism from below.*
- ◆ *Disregard -arrows-.*
- Remove insulating mat above selector mechanism.
- Remove bolts -1, 3, 5, 6-.
- Remove noise insulation -1- and -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



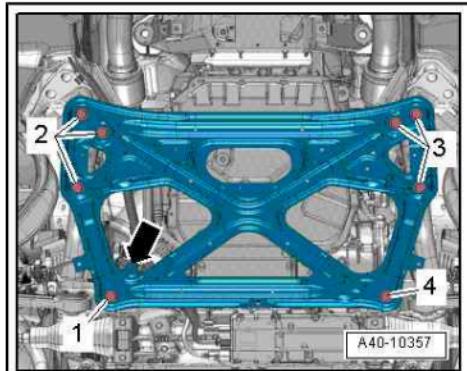
- Remove subframe cross brace ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Removing and installing subframe cross brace .



Caution

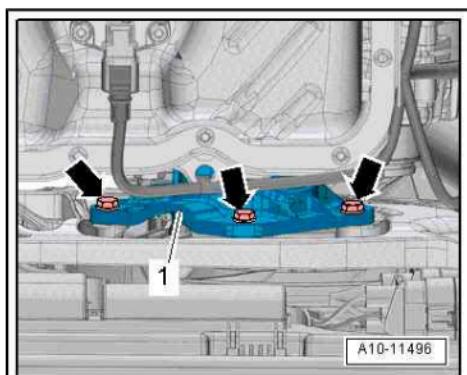
Risk of damage to parts of the running gear.

- ◆ *Do not let the vehicle down on the wheels if the gearbox mounting, steering rack or subframe cross brace are not properly installed.*



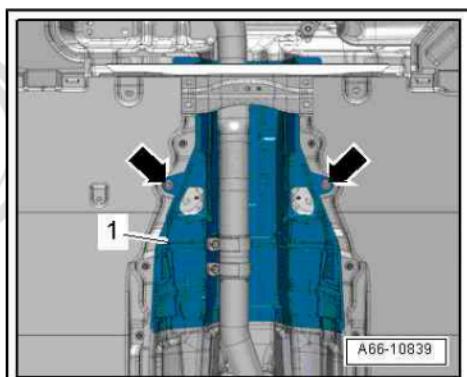
Vehicles with 3.0 ltr. TDI biturbo engine:

- Remove bolts -arrows- and press stop -1- for torque reaction support towards engine.
- Remove particulate filter ⇒ Rep. gr. 26 ; Emission control system; Removing and installing particulate filter .



Continued for all vehicles:

- If fitted, remove heat shield -1- for propshaft and heat shield (rear) for centre tunnel ⇒ General body repairs, exterior; Rep. gr. 66 ; Strips / trim panels / extensions; Exploded view - heat shield .



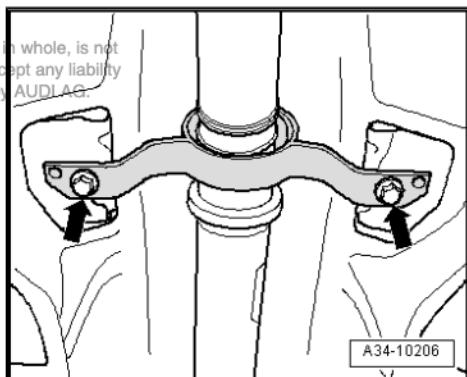
- Remove bolts -arrows- securing centre propshaft bearing.

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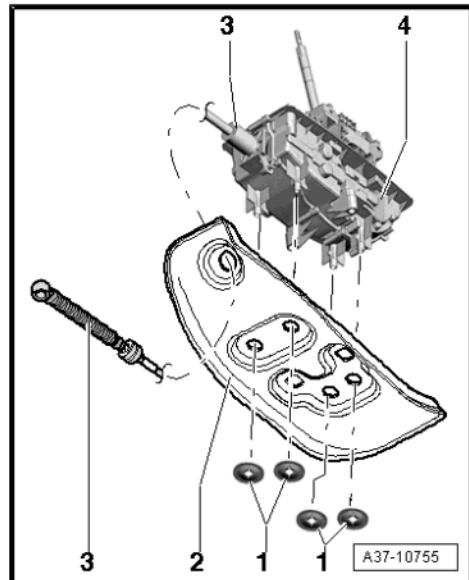


Note

The propshaft can be bent as far as the stop at the centre joint, but must not be subjected to any kind of force. The centre joint or the protective boot can be damaged if the joint is forced against its stop.



- If fitted, remove retaining washers -1-.
- Detach noise insulation -2- from shift unit -4- and slide noise insulation forwards towards selector lever cable -3-.

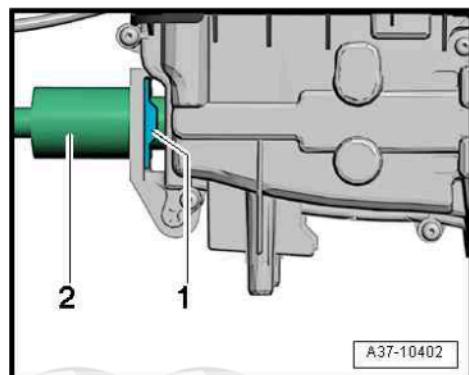


- Pull out retaining clip -1- for selector lever cable from the side.
- Pull selector lever cable -2- out of selector mechanism.



Note

Do not bend or kink the selector lever cable.



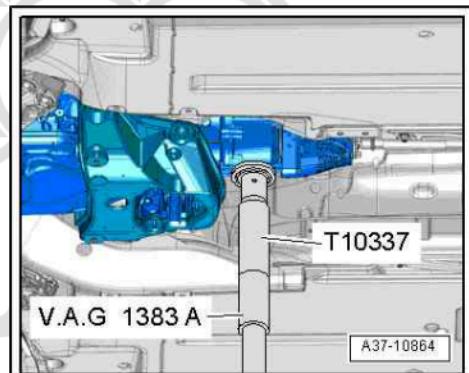
- Set up gearbox support - T10337- on engine and gearbox jack - V.A.G 1383 A- and position underneath gearbox.
- Raise gearbox slightly.



WARNING

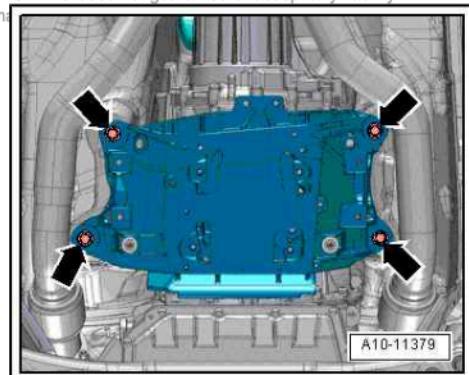
Risk of accident.

- ◆ *Engine and gearbox jack - V.A.G 1383 A- must remain in position when work is being carried out and must not be left unattended under the vehicle.*



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- Remove bolts -arrows- for tunnel cross member.

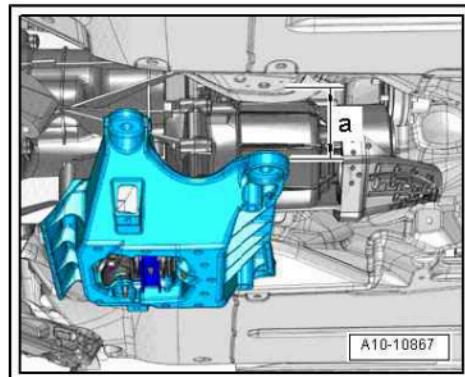


- Lower gearbox by dimension -a- using engine and gearbox jack - V.A.G 1383 A- .
- Dimension -a- = 70 mm (maximum)
- Take off shift unit.

Installing

Installation is carried out in reverse sequence; note the following:

- Insert shift unit and secure from above.
- Install selector lever cable [⇒ page 37](#) .
- Adjust selector lever cable [⇒ page 41](#) .
- Check selector mechanism [⇒ page 34](#) .
- Install centre propshaft bearing ⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Exploded view - propshaft .
- Install front ashtray or storage compartment ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Exploded view - centre console .
- Install selector lever handle [⇒ page 22](#) .



Tightening torques

- ◆ [⇒ "1.2 Exploded view - selector mechanism", page 19](#)
- ◆ [⇒ "1.3 Exploded view - selector lever cable", page 21](#)
- ◆ [⇒ "3.1 Exploded view - assembly mountings", page 102](#)
- ◆ Cross brace ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Exploded view - subframe
- ◆ [⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers](#)
- ◆ [⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation](#)

1.8 Checking selector mechanism

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WARNING

Accidents and injury can be caused if a gear is inadvertently engaged while the engine is running.

- ◆ *Before performing any work with the engine running, set the gearbox to position "P" and pull up the parking brake button to apply the electromechanical parking brake.*
- ◆ *Observe safety precautions when the vehicle is moving [⇒ page 3](#) .*
- ◆ *You must work through all the tests listed. If specified results are not obtained, adjust selector lever cable ([⇒ page 41](#)) and perform "Guided Fault Finding" using vehicle diagnostic tester .*

Overview:

- ◆ 1. Checking operation of selector mechanism [⇒ page 35](#)
- ◆ 2. Checking interlock button on selector lever handle [⇒ page 36](#)

1. Checking operation of selector mechanism

- It should not be possible to operate the starter while the selector lever is in positions "R", "D/S" or in the "tiptronic gate".
- When travelling at speeds above 5 km/h and shifting into selector lever position "N", the solenoid for the selector lever lock must not engage and block the selector lever. The selector lever can be shifted into a driving gear.
- When travelling at speeds below 2 km/h (almost stationary), the solenoid for the selector lever lock should only engage about 1 second after you shift into selector lever position "N". The selector lever cannot be shifted out of "N" position until the brake pedal is pressed.

Selector lever in position "P":

- Pull up parking brake button to apply electromechanical parking brake.
- Switch off ignition.
- The selector lever is locked and cannot be shifted out of "P" position, even when the interlock button on the handle is pressed in.
- Switch on ignition.



Note

To obtain the "ignition on" position, briefly press the entry and start authorisation button - E408- .

- Do not depress brake pedal.
- The selector lever is locked and cannot be shifted out of "P" position, even when the interlock button on the handle is pressed in. Selector lever lock solenoid - N110- blocks selector lever.
- Press and hold brake pedal.
- Selector lever lock solenoid - N110- releases selector lever. It is possible to shift into a driving gear. With interlock button on selector lever handle pressed, shift selector lever slowly from "P" position through "R, N, and D/S" and check whether the selector lever position display - Y6- in the instrument cluster shows the correct selector lever position in each case.
- Pull selector lever from "D/S" towards the rear and release selector lever.
- The selector lever will return automatically to the position "D/S". The selector lever position display - Y6- in the instrument cluster should change from "D" to "S1" and then back to "D" when the selector lever is pulled back once again.

Selector lever in position "N" and ignition switched on:

- Do not depress brake pedal.
- After a short delay: Selector lever is locked and cannot be shifted out of "N" position even when pressing the interlock button on the selector lever handle. Selector lever lock solenoid - N110- blocks selector lever.
- Depress brake pedal.
- Selector lever lock solenoid - N110- releases selector lever. Shifting into position "D/S" is possible.

Selector lever in position "D/S", ignition switched on:

- Shift selector lever into "tiptronic gate".
- The illuminated "D/S" symbol in the selector lever position display - Y26- should go out and the "+" and "-" symbols should light up.
- The selector lever position display - Y6- in the instrument cluster should change from "D" to "M1" when the selector lever is moved into the "tiptronic gate".
- Do not move selector lever to position "P"; select e.g. position "N".
- Switch off ignition.
- A warning message should be displayed in the instrument cluster.
- The vehicle cannot be locked.
- Move selector lever to position "P".
- Switch off ignition.
- The vehicle can now be locked.

If results do not match specifications:

- Perform **Guided Fault Finding** routine using vehicle diagnostic tester .
- Adjust selector lever cable [⇒ page 41](#) .
- Check interlock button on selector lever handle [⇒ page 36](#) .

2. Checking interlock button on selector lever handle

Check that interlock button moves freely:

- Interlock button should move easily when pressed without force.
- Interlock button should spring back fully on its own when released.

If results do not match specifications:

- Check whether selector lever handle is correctly installed [⇒ page 22](#) .
- Check whether selector lever is bent.

Function test:

- Ignition switched on

Press the interlock button on the selector lever handle to move the handle into the positions listed below; it should not be possible to move the selector lever into these positions unless the interlock button is pressed.

- ◆ "P" to "R" (also depress brake pedal)
- ◆ "N" to "R" (brake pedal also has to be depressed after a short delay when vehicle is stationary)
- ◆ "R" to "P"

If results do not match specifications:

- Check whether selector lever handle is correctly installed [⇒ page 22](#) .
- Check electrical connectors on selector mechanism.
- Perform **Guided Fault Finding** using vehicle diagnostic tester and check selector lever lock solenoid - N110- .



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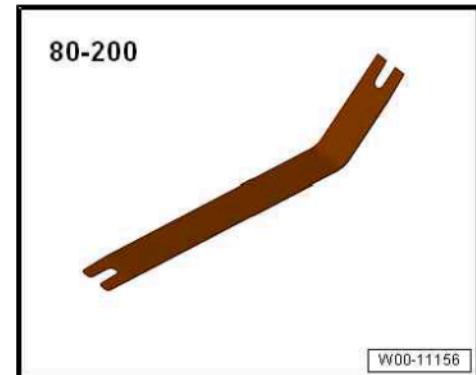
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- Adjust selector lever cable [⇒ page 41](#) .

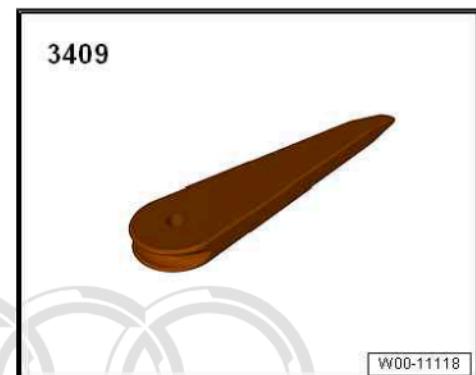
1.9 Removing and installing selector lever cable

Special tools and workshop equipment required

- ◆ Removal lever - 80 - 200-



- ◆ Removal wedge - 3409-

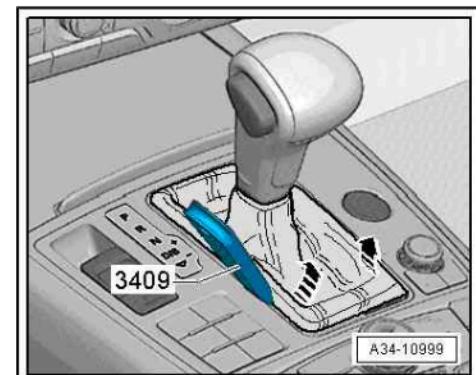


- ◆ Socket - T40031-



Removing

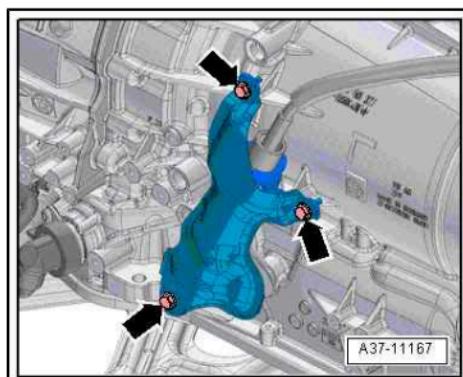
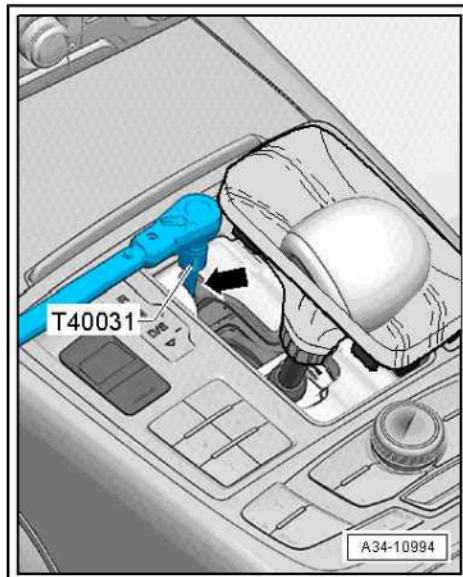
- Pull up parking brake button to apply electromechanical parking brake.
- Shift selector lever to position “D/S”.
- Carefully pry out selector lever boot at the side in direction of -arrows- using removal wedge - 3409- and turn selector lever boot inside out over selector lever handle.



- Insert socket and key - T40031- through access hole -arrow- in selector mechanism and slacken bolt on selector lever cable approx. one turn.

 Note

- ◆ Only loosen clamping bolt – do not remove.
- ◆ Clamping bolt can only be accessed with selector lever in position "D/S".
- ◆ With clamping bolt loosened, selector lever must remain in position "D/S".
- Vehicles with 3.0 ltr. TFSI engine: Remove front silencer (left-side) ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers .
- Vehicles with 3.0 ltr. TDI biturbo engine: Remove front exhaust pipe ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers .
- If fitted, remove bolts -arrows- and detach heat shield.



- Remove bolts -arrows- and detach heat shield -1- for prop-shaft.

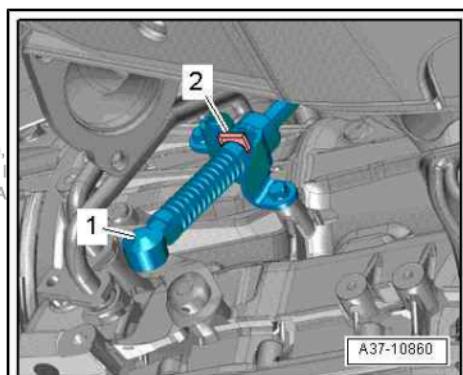
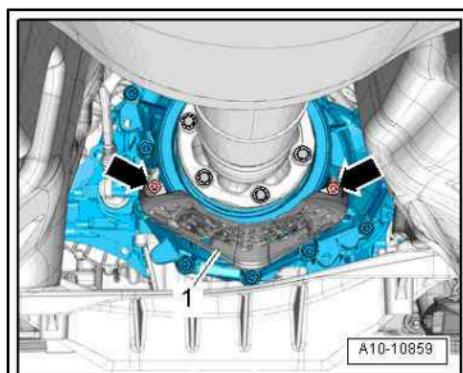


- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.
- Pry off retaining clip -2- and detach selector lever cable from gearbox.

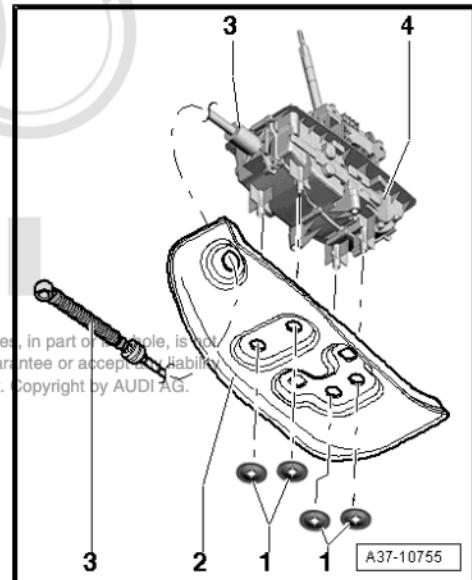
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 Note

Do not bend or kink the selector lever cable.



- Remove four retaining washers -1-.
- Pull off noise insulation -2- and slide forwards.



- Pull out retaining clip -1- for selector lever cable from the side.
- Pull selector lever cable -2- out of selector mechanism.

Installing

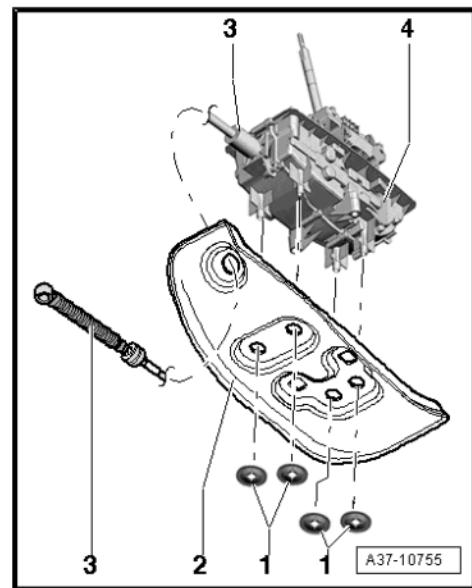
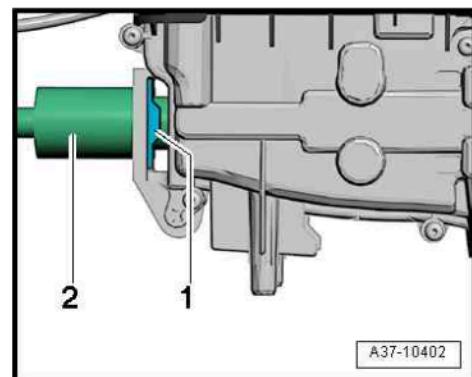
Installation is carried out in reverse sequence; note the following:



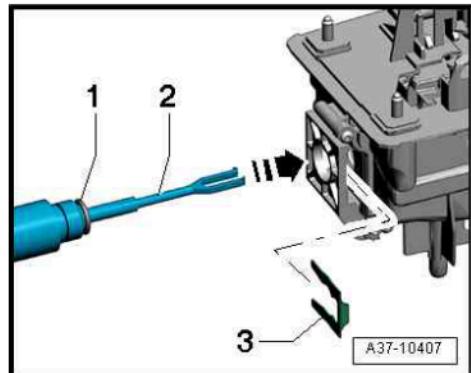
Note

- ◆ *Renew retaining washers.*
- ◆ *Renew O-ring on selector lever cable.*
- ◆ *Before installing, lightly grease cable eye and ball socket on selector lever cable with polycarbamide grease - G 052 142 A2-.*

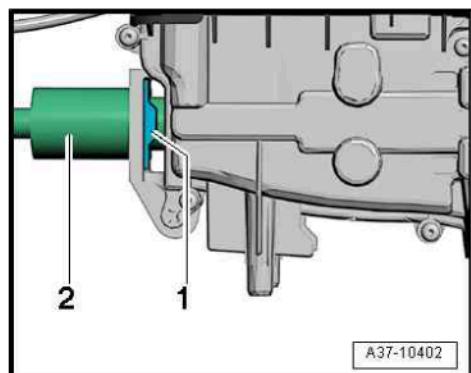
- Slide selector lever cable -3- through hole on noise insulation -2-.



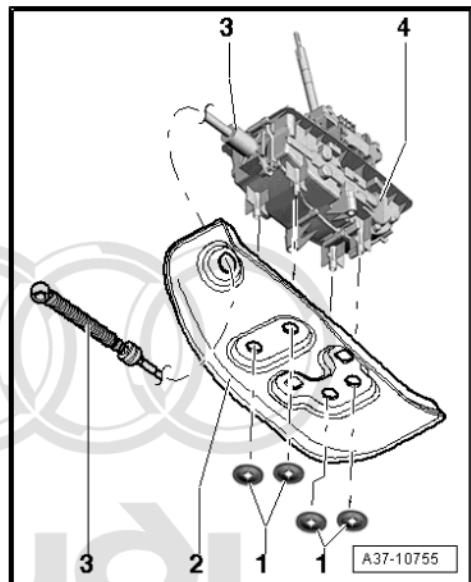
- Fit O-ring -1- on selector lever cable.
- Insert selector lever cable -2- into shift unit -arrow-.
- Secure selector lever cable with retaining clip -3-.



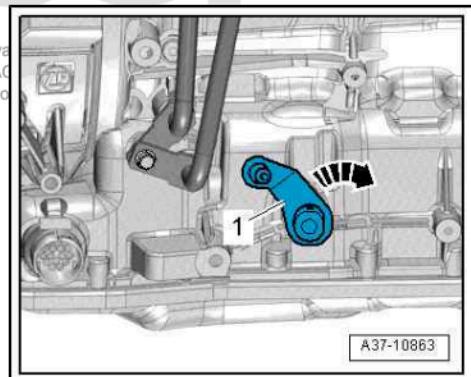
- Installation position: angled end of retaining clip -1- must point towards selector mechanism.



- Secure noise insulation -2- with four new retaining washers -1-.



- Press gearbox selector lever -1- on gearbox towards the rear as far as it will go -arrow- until parking lock engages. Copying for private use is only permitted unless authorised by AUDI AG. The law permits the copying of this document for private use only. Any other use, in particular its commercial use, is not permitted without the prior written consent of AUDI AG.
- When the parking lock has engaged it should no longer be possible to rotate both front wheels in one direction at the same time.
- Then push gearbox selector lever forward 3 notches so that gearbox is in position "D/S".
- Check that the selector lever inside the vehicle is also in position "D/S".

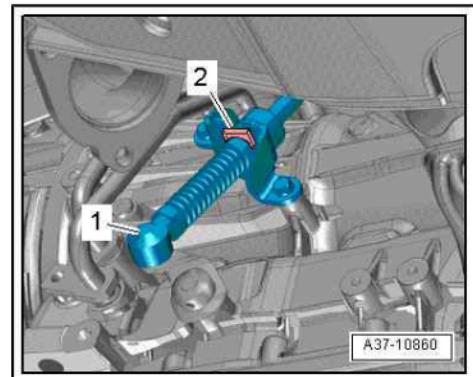


- Carefully press ball socket of selector lever cable -1- onto gearbox selector lever in this position.
- Secure selector lever cable with retaining clip -2-.



Note

- ◆ *Do not bend or kink the selector lever cable.*
- ◆ *Take care not to bend the gearbox selector lever when pressing on the cable; support the lever if necessary, as otherwise the selector mechanism can no longer be adjusted accurately.*



- Check selector lever cable and adjust if necessary
⇒ [page 41](#) .
- Check selector mechanism ⇒ [page 34](#) .

Tightening torques

- ◆ ⇒ “[1.3 Exploded view - selector lever cable](#)”, [page 21](#)
- ◆ ⇒ [Fig. “Heat shield - tightening torque”](#), [page 21](#)
- ◆ ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers

1.10 Checking and adjusting selector lever cable

⇒ “[1.10.1 Checking and adjusting selector lever cable](#)”, [page 41](#)

⇒ “[1.10.2 Adjusting selector lever cable to basic setting](#)”, [page 42](#)

1.10.1 Checking and adjusting selector lever cable

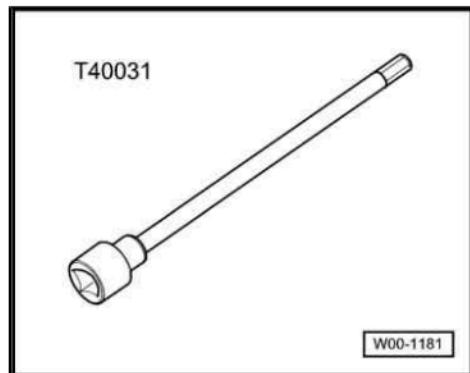
Special tools and workshop equipment required

- ◆ Removal wedge - 3409-

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◆ Socket - T40031-



Procedure

- Pull up parking brake button to apply electromechanical parking brake.
- Shift selector lever to position "D/S".
- Carefully pry out selector lever boot at the side in direction of -arrows- using removal wedge - 3409- and turn selector lever boot inside out over selector lever handle.
- Insert socket and key - T40031- through access hole -arrow- in selector mechanism and slacken bolt on selector lever cable approx. one turn.

 Note

- ◆ Only loosen clamping bolt – do not remove.
- ◆ Clamping bolt can only be accessed with selector lever in position "D/S".
- ◆ With clamping bolt loosened, selector lever must remain in position "D/S".
- Carefully move selector lever slightly forwards and backwards, without shifting lever into a different selector lever position. The selector lever cable is thereby slackened.
- Shift selector lever into "tiptronic gate".
- Use socket and key - T40031- to tighten clamping bolt in this position, taking care not to touch selector lever.
- Check selector mechanism [⇒ page 34](#).

If selector mechanism is not functioning correctly after adjusting selector lever cable, proceed as follows:

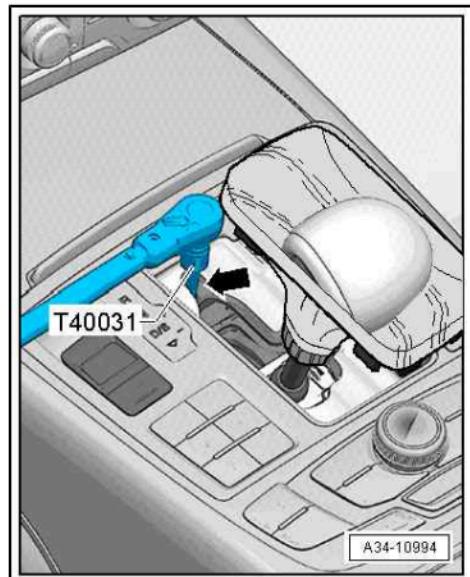
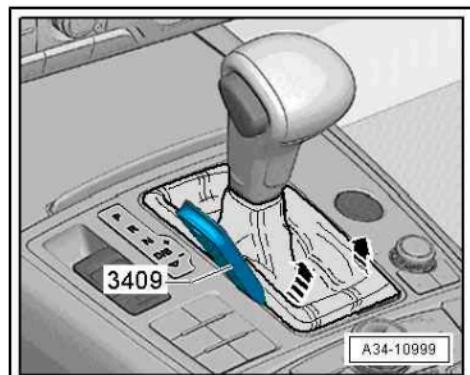
- **Adjust selector lever cable to basic setting [⇒ page 42](#).**

Tightening torques

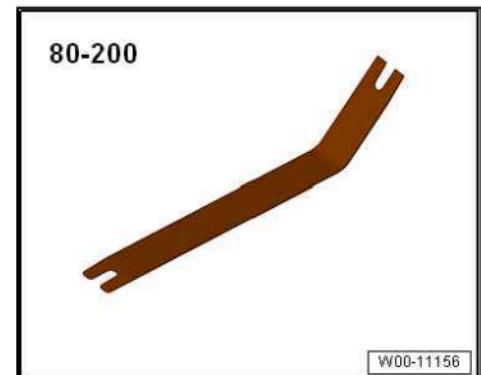
- ◆ [⇒ "1.3 Exploded view - selector lever cable", page 21](#)

1.10.2 Adjusting selector lever cable to basic setting

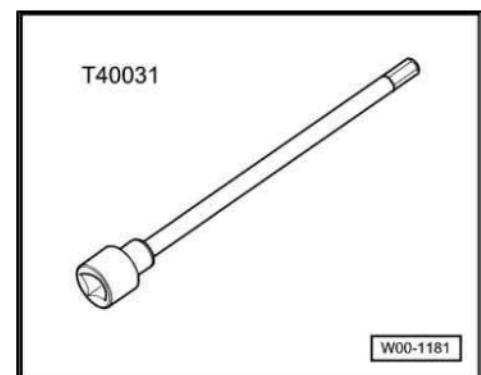
Special tools and workshop equipment required



- ◆ Vehicle diagnostic tester
- ◆ Removal lever - 80 - 200-



- ◆ Socket - T40031-



Procedure

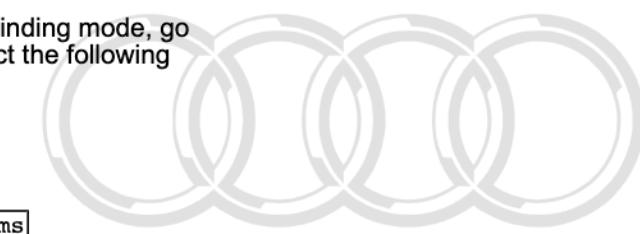
- ◆ **Guided Fault Finding** using the vehicle diagnostic tester has been completed; all faults repaired.
- Using the diagnostic tester in Guided Fault Finding mode, go to “Function/Component Selection” and select the following menu items:
 - ◆ **Drive system**
 - ◆ **0BK gearbox**
 - ◆ **01 – Self-diagnosis compatible systems**
 - ◆ **02 – Gearbox electronics**
 - ◆ **02 – Gearbox electronics, Functions**
 - ◆ **02 – Measured values**
- Select the value for **Gear** from the menu.
- Compare the following readings:
 - ◆ Value for “Gear” on vehicle diagnostic tester
 - ◆ Selector lever position
 - ◆ Gear indicated on selector lever position display - Y26- (on selector mechanism)
 - ◆ Selector lever position display - Y6- in instrument cluster

Requirement:

- The displays should match

If the displays do not match:

- Adjust selector lever cable [page 41](#).



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If the displays cannot be matched by adjusting the selector lever cable:

Adjusting selector lever cable to basic setting:

- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.



Note

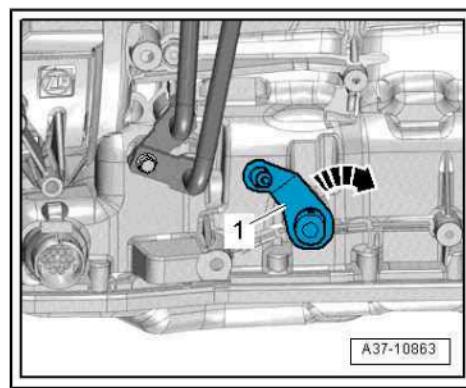
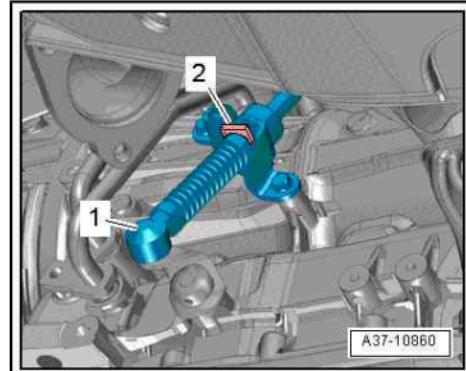
Disregard -item 1-.



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- **Press gearbox selector lever -1- on gearbox towards the rear as far as it will go -arrow- until parking lock engages.**

- When the parking lock has engaged it should no longer be possible to rotate both front wheels in one direction at the same time.
- Then push gearbox selector lever forward 3 notches so that gearbox is in position "D/S".
- Check that the selector lever inside the vehicle is also in position "D/S".

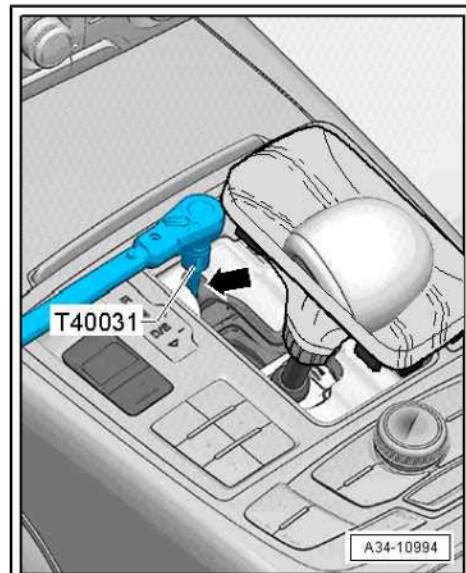


- Insert socket and key - T40031- through access hole -arrow- in selector mechanism and slacken bolt on selector lever cable approx. one turn.



Note

- ◆ Only loosen clamping bolt – do not remove.
- ◆ Clamping bolt can only be accessed with selector lever in position "D/S".
- ◆ With clamping bolt loosened, selector lever must remain in position "D/S".
- Detach socket and key - T40031- from torque wrench and leave it inserted in access hole -arrow- in selector mechanism.

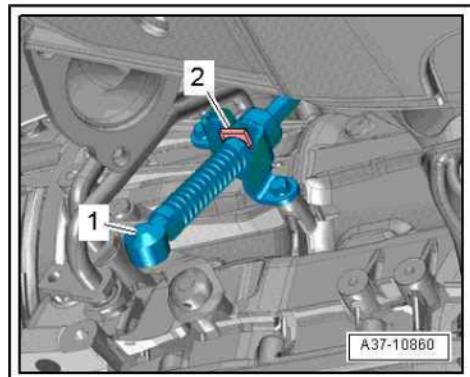


- Carefully press ball socket of selector lever cable -1- onto gearbox selector lever in this position.



Note

- ◆ Take care not to bend gearbox selector lever when pressing on cable; support lever if necessary, as otherwise selector mechanism can no longer be adjusted accurately.
- ◆ Disregard -item 2-.



- With vehicle diagnostic tester in Guided Fault Finding mode, select **02 – Gearbox electronics** and the function **02 – Measured values**.
- Select the value for **Gear** from the menu.
- Compare the following readings:
 - ◆ Value for **Gear** on vehicle diagnostic tester
 - ◆ Selector lever position
 - ◆ Gear indicated on selector lever position display - Y26- (on selector mechanism)
 - ◆ Selector lever position display - Y6- in instrument cluster

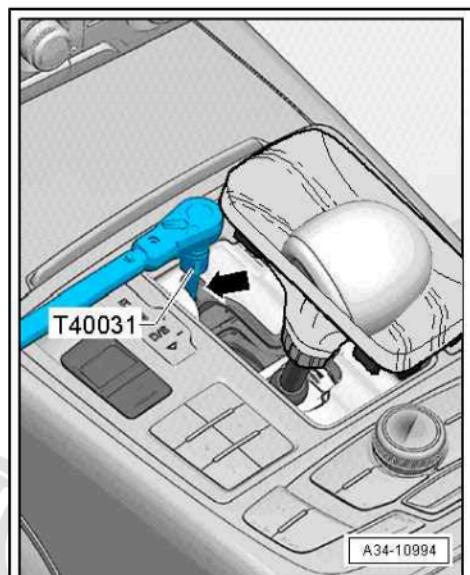
Requirement:

- The displays should match

- Carefully move selector lever slightly forwards and backwards, without shifting lever into a different selector lever position. The selector lever cable is thereby slackened.
- Use socket and key - T40031- to tighten clamping bolt in this position, taking care not to touch selector lever.
- Check selector mechanism [⇒ page 34](#) .

Tightening torques

- ◆ [⇒ "1.3 Exploded view - selector lever cable", page 21](#)



1.11 Removing and installing selector lever lock solenoid - N110-

Removing

- Move selector lever to position "P".
- Remove front ashtray or storage compartment [⇒ General body repairs, interior; Rep. gr. 68](#); Centre console; Exploded view - centre console .

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- Unscrew nuts -1, 3, 5, 6- a few turns, but do not remove completely.



Note

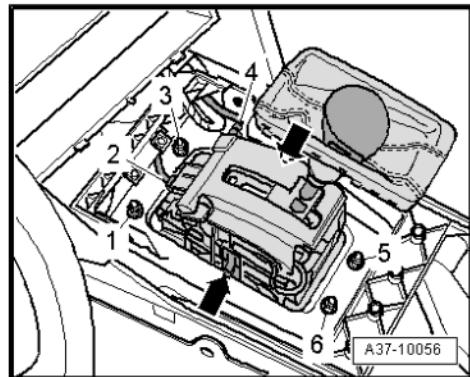
- ◆ *This will lower the shift unit slightly and facilitate removal.*
- ◆ *Items marked -2, 4- and -arrows- can be disregarded.*



Caution

The selector mechanism can be damaged by broken retaining clips, retaining tabs or other objects.

- ◆ *Make sure that no parts or objects drop into the selector mechanism. If this happens, the selector mechanism will have to be renewed!*



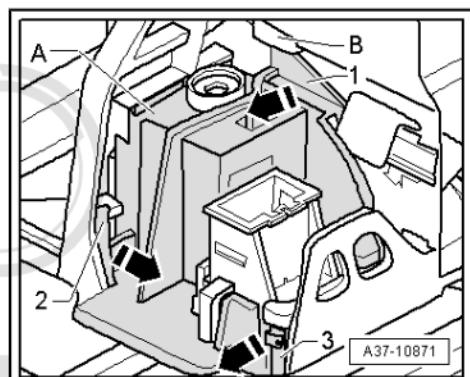
- Release retaining tabs -2- and -3- in direction of -arrow-, lift front of cover -A- slightly and hold in that position.



Note

This prevents the retaining tabs from engaging again.

- Using a screwdriver, release top retaining tab -1- of cover from retainer -B- in direction of -arrow- and lift out cover -A-.



- Unplug electrical connector on selector lever lock solenoid - N110- .

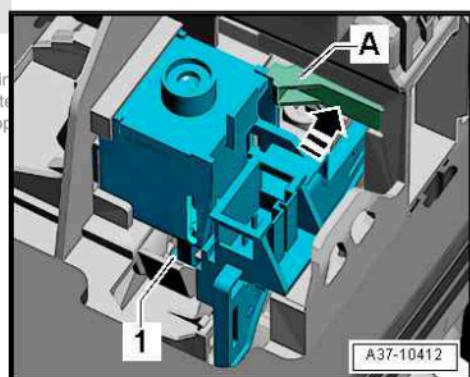
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- Press retaining hook -A- in direction of arrow and hold in this position.



Note

The shift unit must be renewed if the retaining hook -A- breaks off.



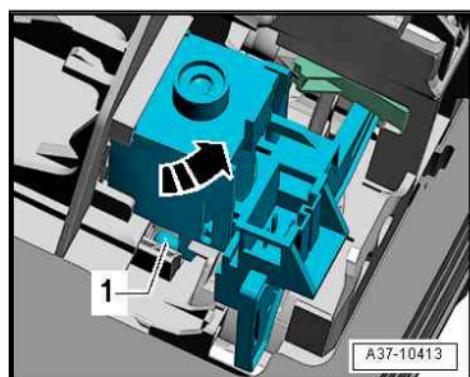
- Tilt bottom part of selector lever lock solenoid - N110- out in direction of -arrow- so that ball rod -1- disengages from operating lever on selector mechanism.

- Detach selector lever lock solenoid - N110- .

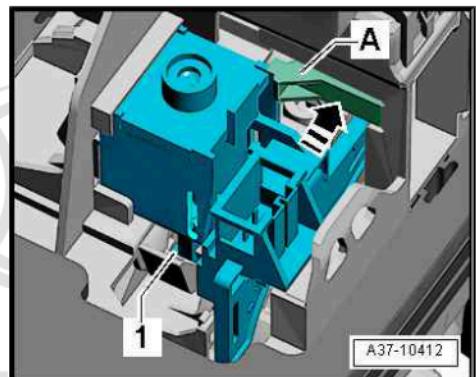
Installing

Installation is carried out in reverse sequence; note the following:

- Turn ball rod -1- into correct position for installation.
- Guide selector lever lock solenoid - N110- into selector mechanism at an angle from above and tilt bottom part in opposite direction of -arrow-.



- Ball rod -1- must engage fully in operating lever on selector mechanism; press home with a small screwdriver if necessary.
- Secure selector lever lock solenoid - N110- to retaining hook -A-.

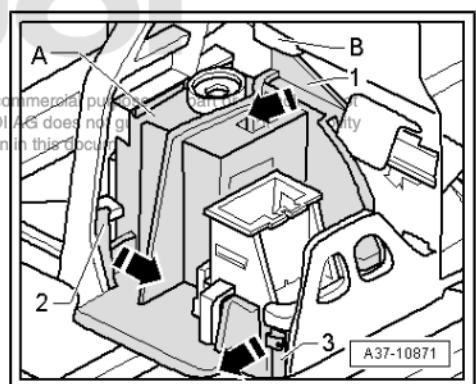


- Place cover -A- over selector lever lock solenoid - N110- and carefully engage -1 ... 3-.
- Attach electrical connectors.
- Check function of selector mechanism **before continuing assembly** [⇒ page 34](#).
- Install front ashtray or storage compartment ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Exploded view - centre console .

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Tightening torques

- ◆ [⇒ “1.2 Exploded view - selector mechanism”, page 19](#)



1.12 Removing and installing selector lever sensors control unit - J587-

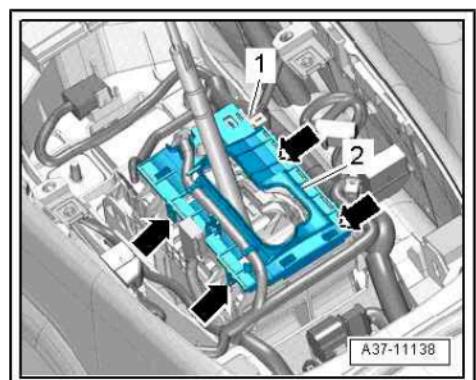
Removing

- Remove selector lever handle [⇒ page 22](#) .
- Remove multimedia system operating unit - E380- ⇒ Communication; Rep. gr. 91 ; Infotainment system; Removing and installing multimedia system operating unit - E380- .
- Unplug electrical connector -1-.
- Release 4 retaining tabs -arrows- and lift out selector lever sensors control unit - J587- -item 2-.

Installing

Installation is carried out in reverse sequence; note the following:

- Make sure selector lever sensors control unit - J587- clicks in place with 4 retaining tabs.
- Install multimedia system operating unit - E380- ⇒ Communication; Rep. gr. 91 ; Infotainment system; Removing and installing multimedia system operating unit - E380- .
- Install selector lever handle [⇒ page 22](#) .

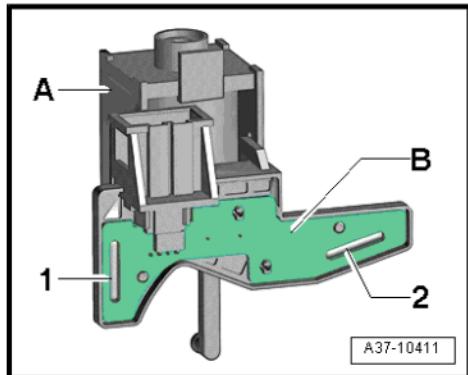


1.13 Removing and installing gear selector position P switch - F305-

- ◆ Fitting location: Gear selector position P switch - F305- consists of two microswitches -1- and -2- and is installed on printed circuit board -B- in selector lever lock solenoid - N110-A-.

Gear selector position P switch - F305- can only be renewed together with selector lever lock solenoid - N110- .

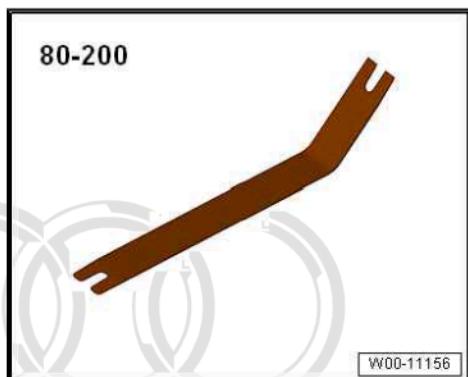
Removing and installing [⇒ page 45](#)



1.14 Renewing selector shaft oil seal

Special tools and workshop equipment required

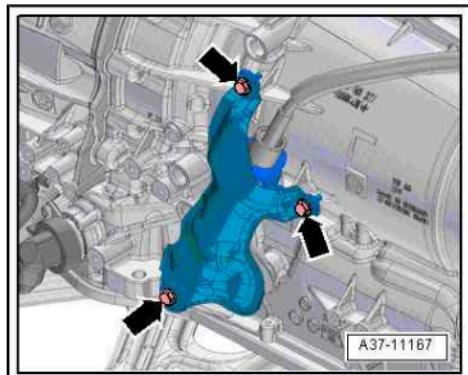
- ◆ Removal lever - 80 - 200-



Procedure

- Vehicles with 3.0 ltr. TFSI engine: Remove front silencer (left-side) ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers .
- Vehicles with 3.0 ltr. TDI biturbo engine: Remove front exhaust pipe ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers .
- Remove ATF oil pan [⇒ page 122](#) .
- Remove ATF filter [⇒ page 125](#) .
- Remove mechatronic unit ⇒ Servicing 8-speed automatic gearbox; Rep. gr. 38 ; Mechatronic unit; Removing and installing mechatronic unit .
- If fitted, remove bolts -arrows- and detach heat shield.

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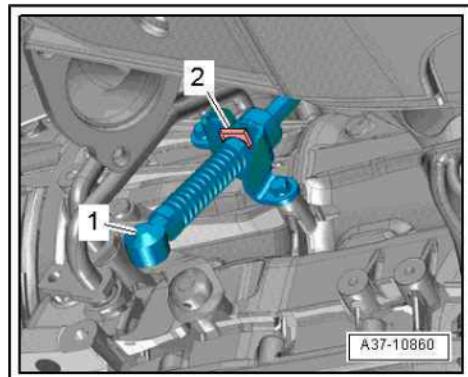


- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.

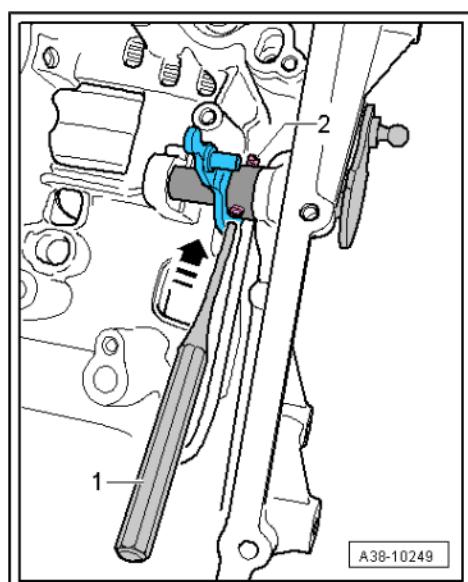


Note

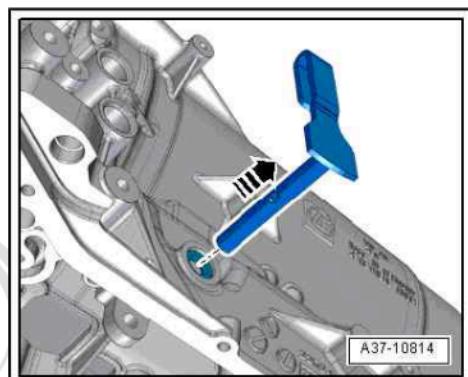
Do not bend or kink the selector lever cable.



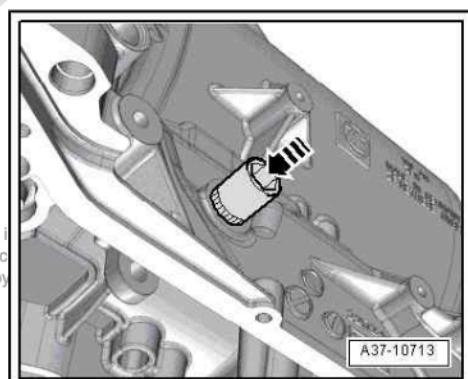
- Knock roll pin -2- out of shaft of gearbox selector lever using a suitable punch -1-.



- Pull off gearbox selector lever with shaft -arrow-.
- Pry out oil seal with small screwdriver.
- Lubricate outer circumference and space between sealing lips of new oil seal with ATF.
- Installation position: open side of oil seal points towards gearbox



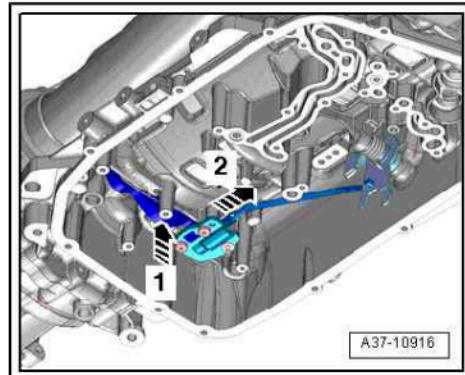
- Fit oil seal on gearbox housing and press in as far as stop -arrow- using a suitable socket.
- Insert gearbox selector lever with shaft.



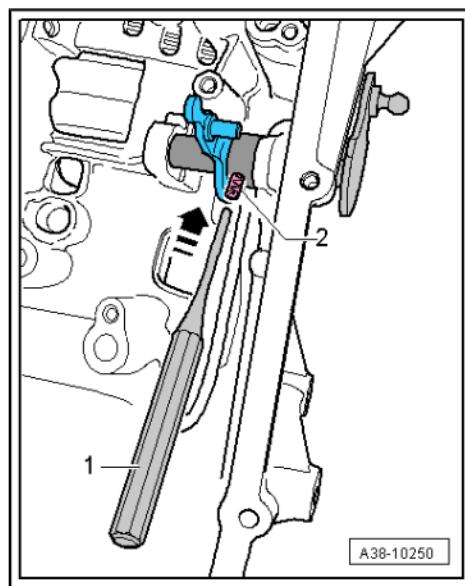
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 Note

If the operating rod for the locking pawl has slipped too far towards the rear, it can only be pulled forward again -arrow 2- if the locking pawl is pressed at the same time -arrow 1-.



- Drive roll pin -2- into shaft of gearbox selector lever until flush using a suitable punch -1- .
- Install mechatronic unit ⇒ Servicing 8-speed automatic gearbox; Rep. gr. 38 ; Mechatronic unit; Removing and installing mechatronic unit .
- Install ATF filter [⇒ page 125](#) .
- Install ATF oil pan [⇒ page 122](#) .
- Install exhaust system ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers .
- Fill up with ATF [⇒ page 118](#) .



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2 Removing and installing gearbox

⇒ ["2.1 Removing gearbox", page 51](#)

⇒ ["2.2 Installing gearbox", page 94](#)

⇒ ["2.3 Tightening torques for gearbox", page 100](#)

2.1 Removing gearbox

⇒ ["2.1.1 Removing gearbox - vehicles with 2.0 ltr. TFSI engine", page 51](#)

⇒ ["2.1.2 Removing gearbox - vehicles with 3.0 ltr. TFSI engine", page 58](#)

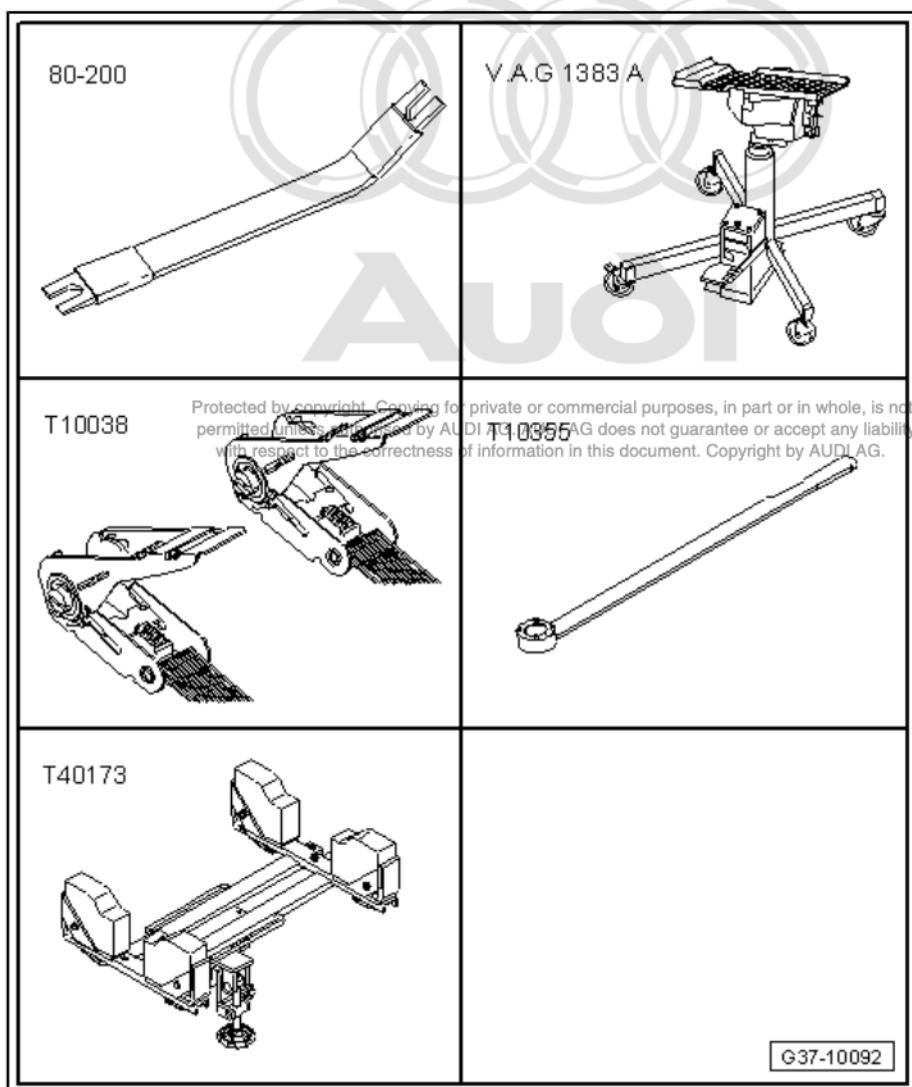
⇒ ["2.1.3 Removing gearbox - vehicles with 4.0 ltr. TFSI engine", page 67](#)

⇒ ["2.1.4 Removing gearbox - vehicles with 3.0 ltr. TDI engine", page 77](#)

⇒ ["2.1.5 Removing gearbox - vehicles with 3.0 ltr. TDI biturbo engine", page 85](#)

2.1.1 Removing gearbox - vehicles with 2.0 ltr. TFSI engine

Special tools and workshop equipment required

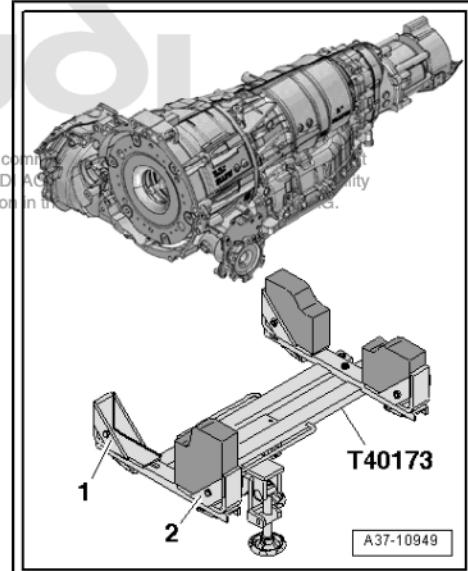


- ◆ Removal lever - 80 - 200-
- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Tensioning strap - T10038-
- ◆ Counterhold tool - T10355-
- ◆ Gearbox support - T40173-

Preparing gearbox support - T40173- :

- Mounting block attached at -position 1- must be removed.
- Mounting block attached at -position 2- must be rotated so that the longer side faces upwards, as shown in illustration.

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Removing

- Bring front wheels into straight-ahead position.

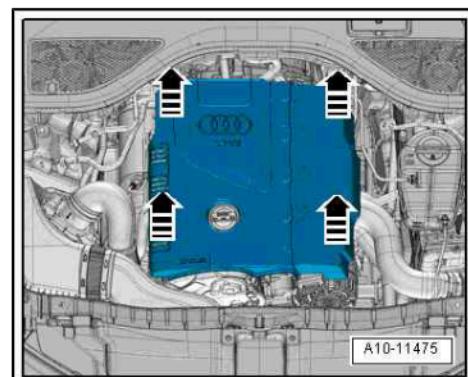
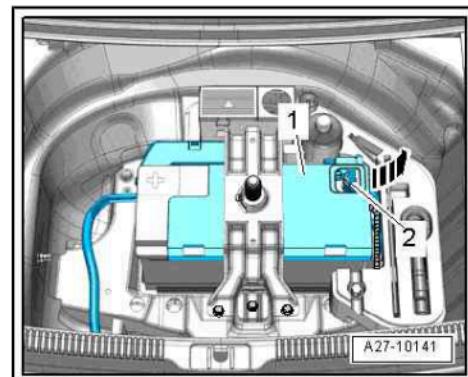


Caution

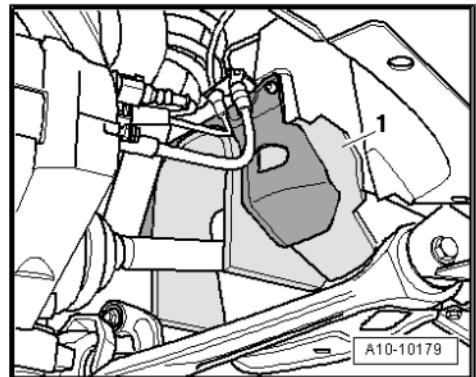
When disconnecting the battery there is a risk of irreparable damage to electronic components.

- ◆ *Observe notes on procedure for disconnecting the battery.*

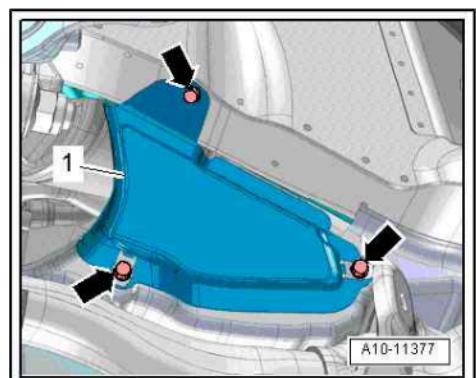
- Disconnect earth wire -2- from battery terminal ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Pull engine cover panel off upwards -arrows-.
- Remove plenum chamber partition panel ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Exploded view - plenum chamber partition panel .



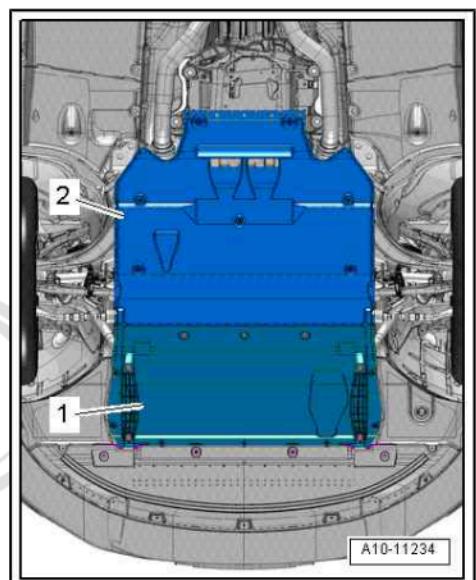
- Remove front wheels ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Remove cover -1- for drive shaft from wheel housing (both sides) ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .



- Remove bolts (left and right) -arrows- and detach heat shield -1-.

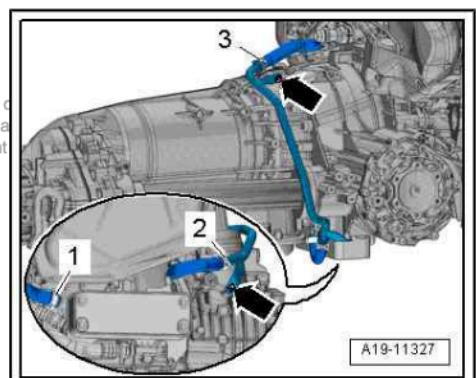


- Remove noise insulation -1- and -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

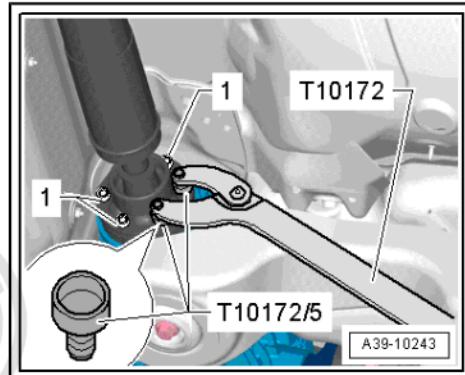


- Remove coolant pipe on gearbox (right-side) ⇒ Rep. gr. 19 ; Coolant pipes; Removing and installing coolant pipes .

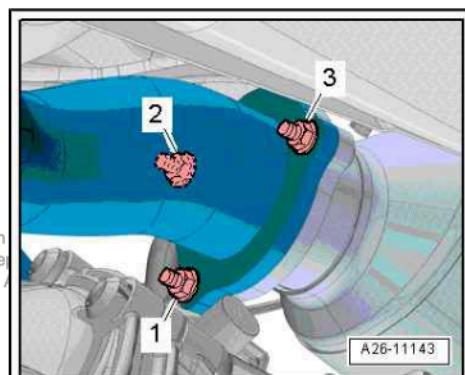
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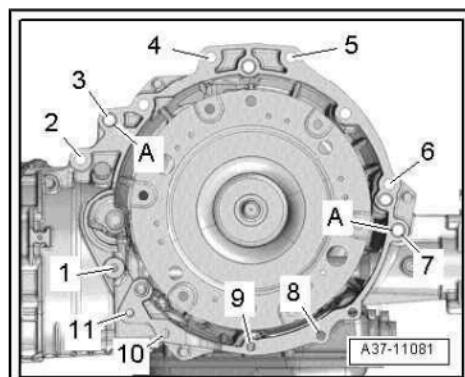
- Remove propshaft ⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft .



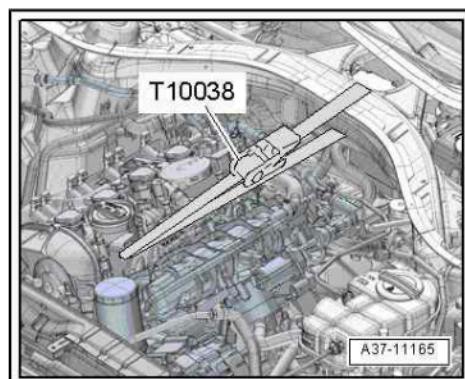
- Remove front silencer ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers .
- Remove ATF cooler [⇒ page 108](#) .



- Remove bolts -2 ... 5- securing gearbox to engine (accessible from above).



- Fit body brace in installation position and screw in bolts hand-tight.
- Secure engine with tensioning strap - T10038- as shown in illustration.

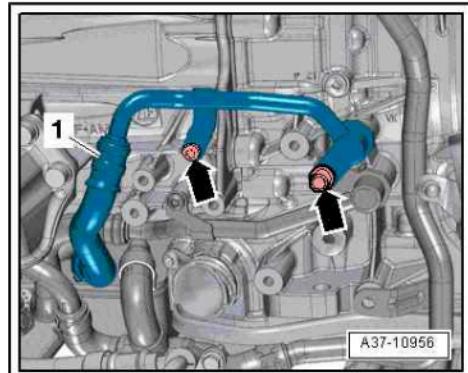




Note

Place a cloth below to catch escaping ATF.

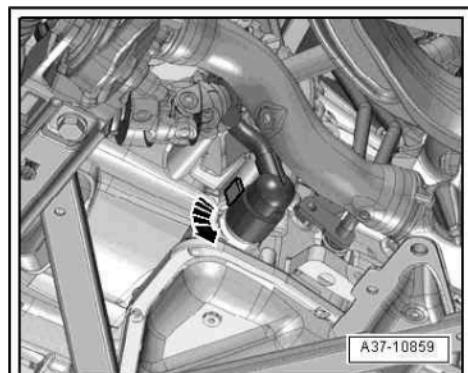
- Remove bolts -arrows- and detach ATF line -1- from gearbox.
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .



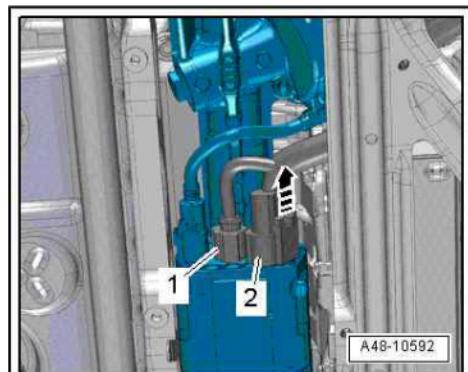
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The gearbox control unit (mechatronic unit) can be damaged by electrostatic discharge.

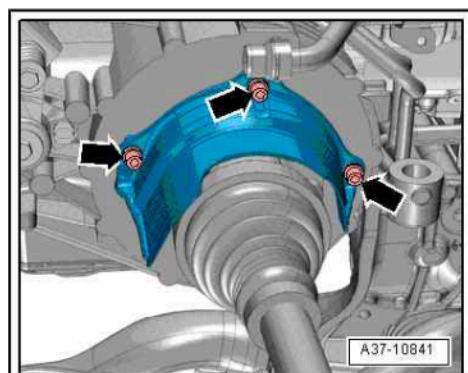
- ◆ Do not touch contact pins in gearbox connector with bare hands.



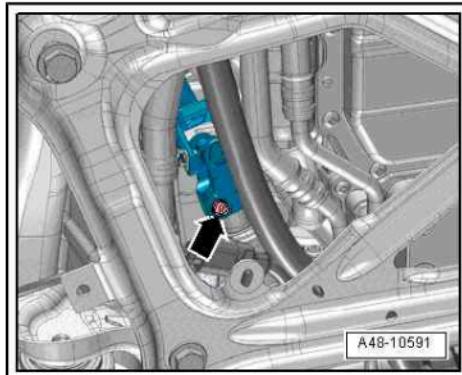
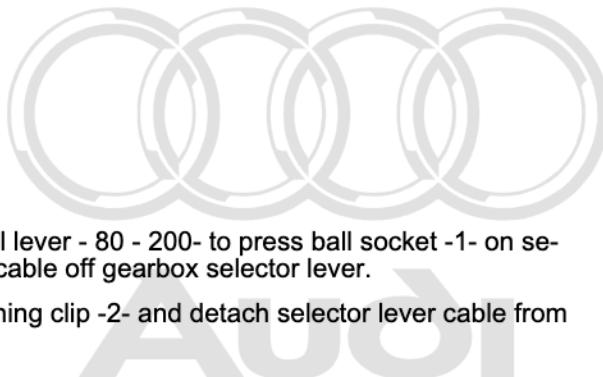
- Touch gearbox housing with your hand (without gloves) to discharge any static electricity.
- Turn fastener anti-clockwise -arrow- and unplug electrical connector on gearbox.
- Move electrical wiring harness clear on gearbox.
- Unplug electrical connector -2- from power steering control unit - J500- (to do so, release retainer -arrow- and press down release catch).
- Unplug electrical connector -1- on power steering control unit - J500- .



- Remove bolts -arrows- and detach heat shield for drive shaft (right-side).
- Unbolt drive shafts (left and right) from flange shafts of gearbox ➔ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



- Detach intermediate steering shaft from steering rack and telescope splines upwards ⇒ Running gear, axles, steering; Rep. gr. 48 ; Steering column; Removing and installing intermediate steering shaft .

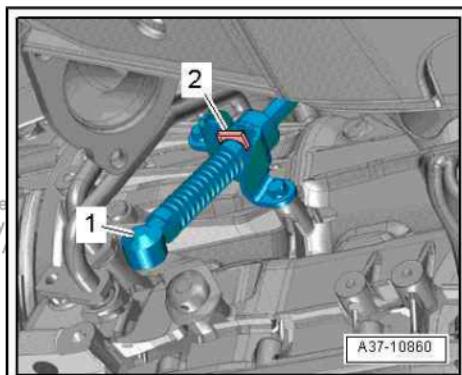


- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.
- Pry off retaining clip -2- and detach selector lever cable from gearbox.

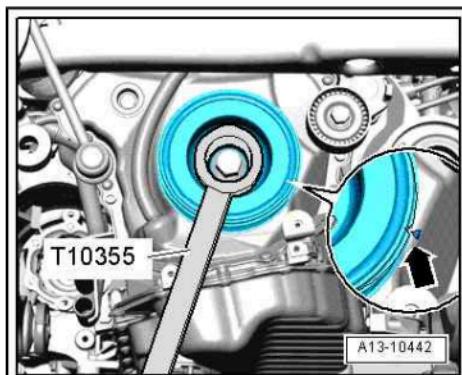


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Do not bend or kink the selector lever cable.



- To slacken bolts for torque converter, counterhold crankshaft with counterhold tool - T10355- at vibration damper.

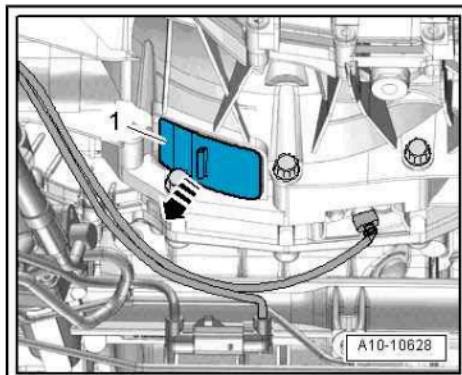


- Pull cover -1- off bottom of gearbox -arrow-.

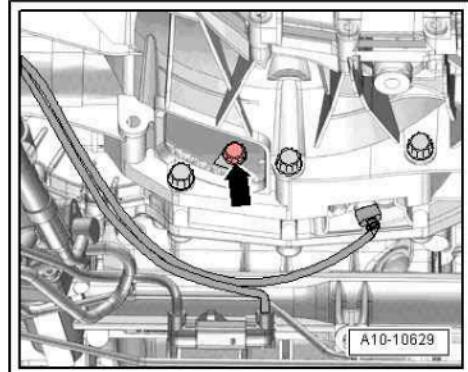


Note

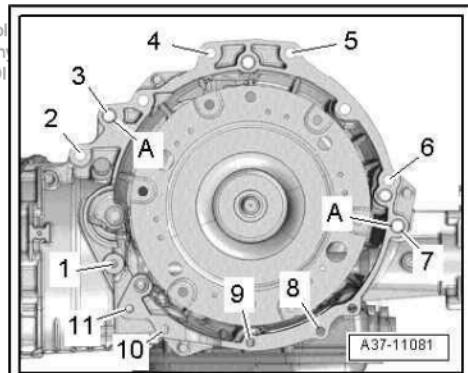
When you then turn the crankshaft, only turn crankshaft in direction of engine rotation -arrow-.



- Remove 6 bolts -arrow- for torque converter (turn crankshaft 60° in direction of engine rotation each time).



- Remove bolt -1- for starter.
- Detach starter from gearbox but do not remove starter.
- Remove remaining engine/gearbox securing bolts -6 ... 11-; leave bolt -7- screwed in hand-tight.

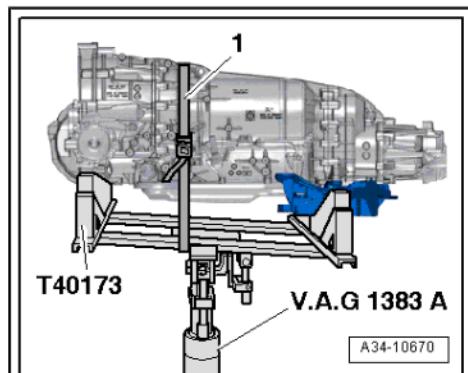
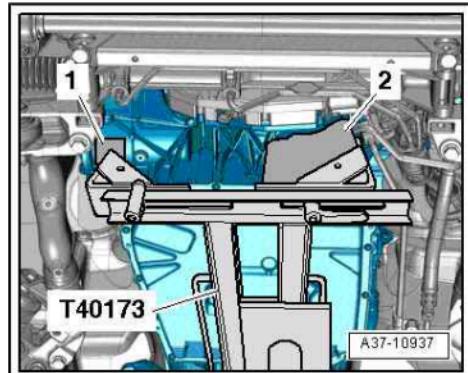


Caution

Risk of leaks on ATF oil pan.

- ◆ Do not apply gearbox support - T40173- at ATF oil pan.

- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - T40173- (already prepared) underneath gearbox.
- Gearbox support must be positioned as follows at front of gearbox:
 - On left side of gearbox, mounting block -2- engages in opening for dual-mass flywheel on gearbox housing.
 - On right side of gearbox, gearbox support is applied to differential housing. Place flat rubber block -1- between the two to protect housing.
- Use tensioning strap -1- to secure gearbox.

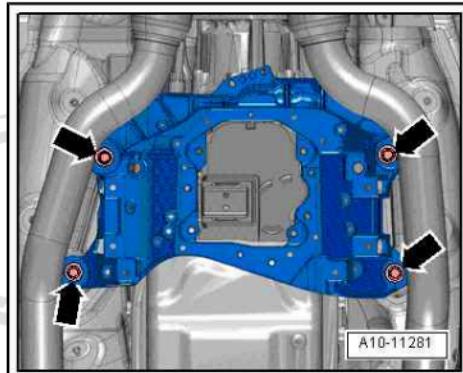




Note

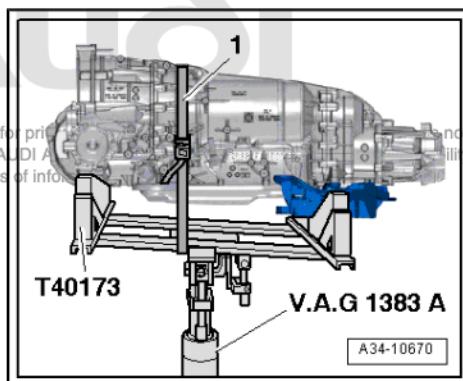
For illustration purposes, the gearbox support - T40173- is not shown.

- Remove bolts -arrows- for tunnel cross member.



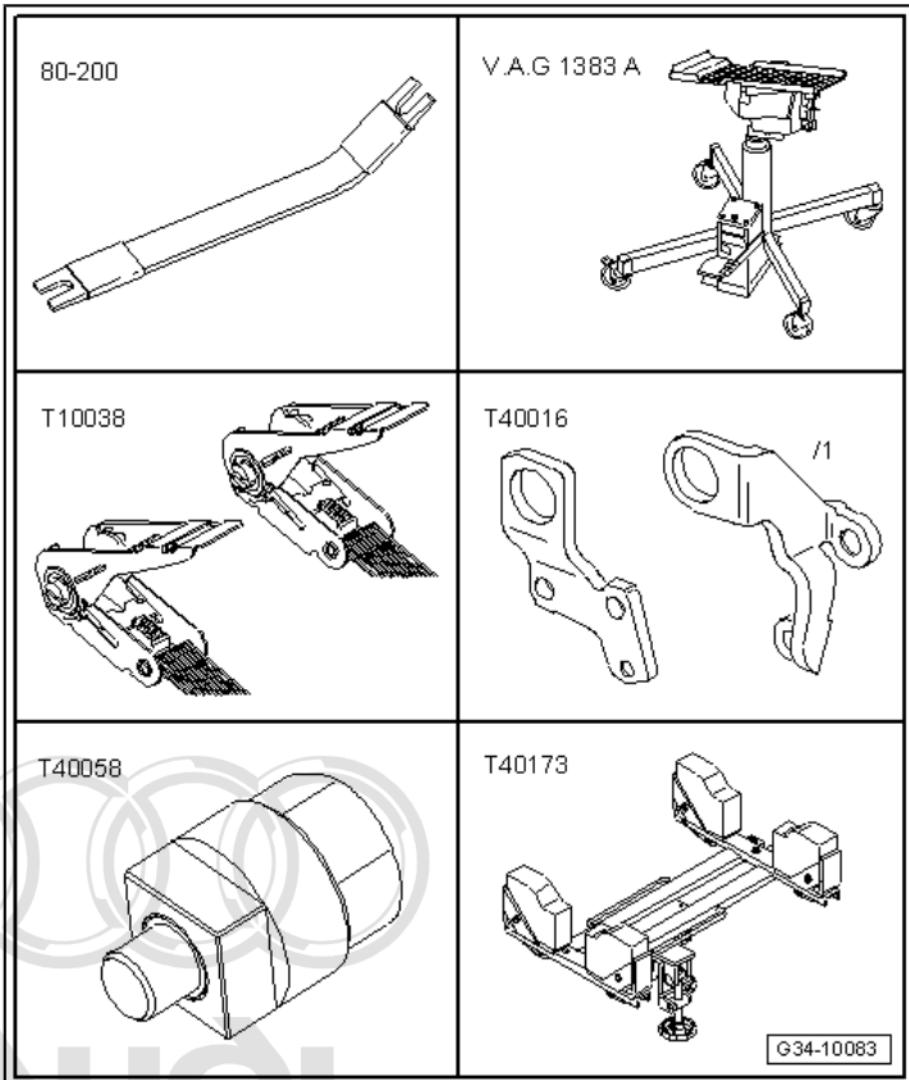
- Remove the last bolt securing the gearbox to the engine.
- Detach gearbox from engine and lower carefully using engine and gearbox jack - V.A.G 1383 A- .

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2.1.2 Removing gearbox - vehicles with 3.0 ltr. TFSI engine

Special tools and workshop equipment required

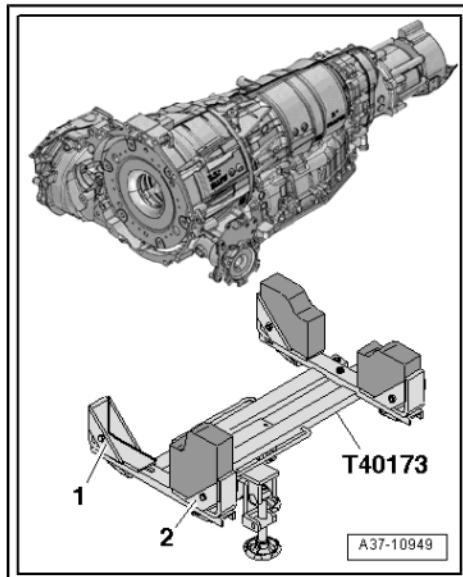


- ◆ Removal lever - 80 - 200-
- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Tensioning strap - T10038-
- ◆ Transportation shackle - T40016-
- ◆ Adapter - T40058-
- ◆ Gearbox support - T40173-

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Preparing gearbox support - T40173- :

- Mounting block attached at -position 1- must be removed.
- Mounting block attached at -position 2- must be rotated so that the longer side faces upwards, as shown in illustration.



Removing

- Bring front wheels into straight-ahead position.

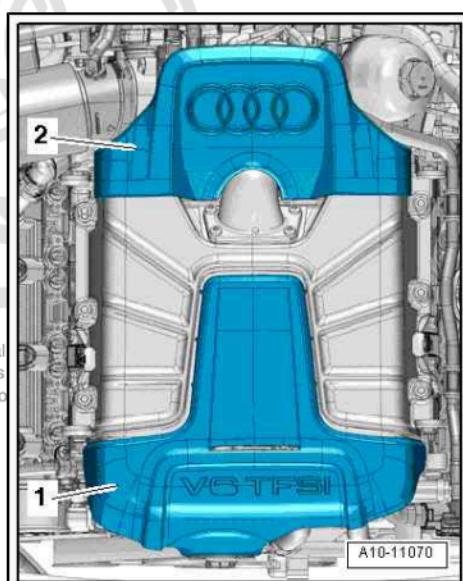
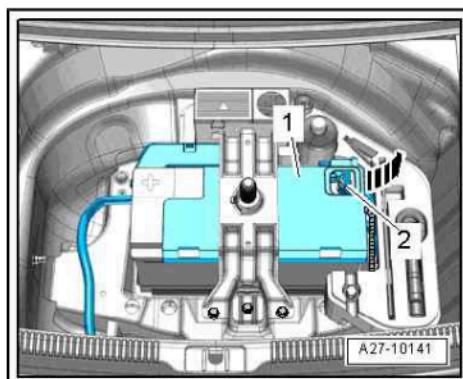


Caution

When disconnecting the battery there is a risk of irreparable damage to electronic components.

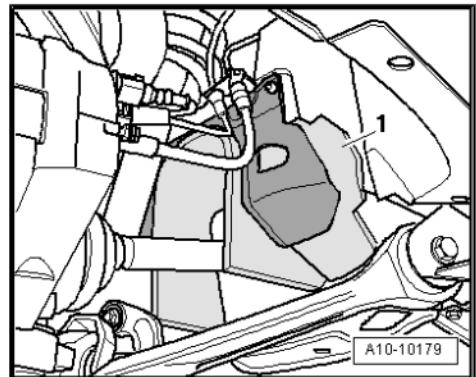
◆ *Observe notes on procedure for disconnecting the battery.*

- Disconnect earth wire -2- from battery terminal ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Pull engine cover panels -1- and -2- off upwards.
- Remove plenum chamber partition panel ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Exploded view - plenum chamber partition panel .

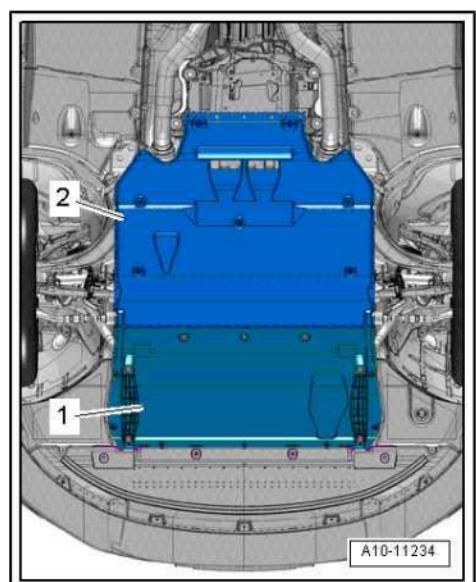


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- Remove front wheels ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Remove cover -1- for drive shaft from wheel housing (both sides) ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .



- Remove noise insulation -1- and -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

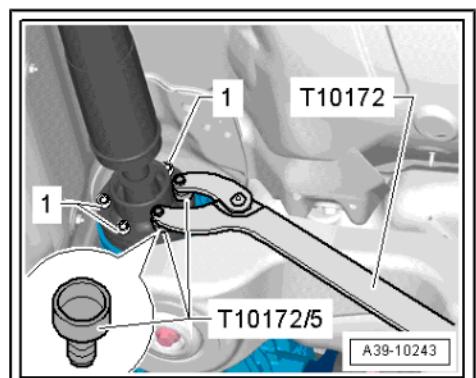
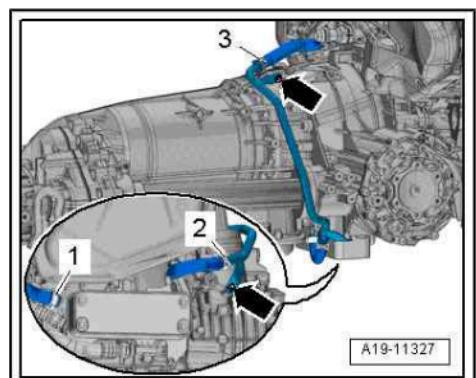


- Remove coolant pipe on gearbox (right-side) ⇒ Rep. gr. 19 ; Coolant pipes; Removing and installing coolant pipes .

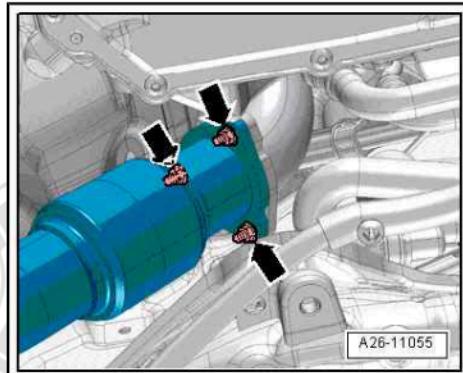


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- Remove propshaft ⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft .

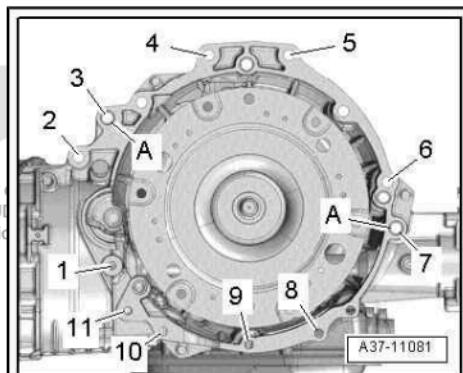


- Remove front silencers (left and right) ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Removing and installing front silencer .
- Remove ATF cooler [⇒ page 108](#) .

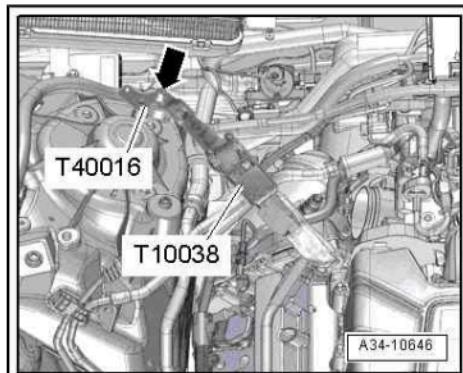


- Remove bolts -2 ... 5- securing gearbox to engine (accessible from above).

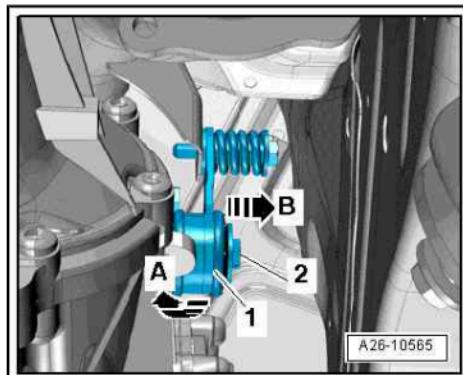
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- Secure transportation shackle - T40016- to threaded hole for body brace with M8x20 bolt -arrow-.



- Remove bolt -2-.
- Push retainer -1- in direction of -arrow B- and pivot to the rear -arrow A-.
- Attach tensioning strap - T10038- as shown in illustration.

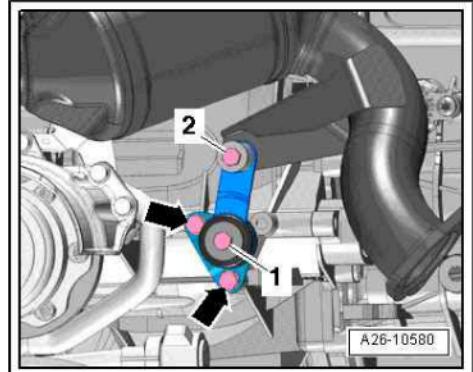


- Unscrew bolts -2- and -arrows- and detach bracket.



Note

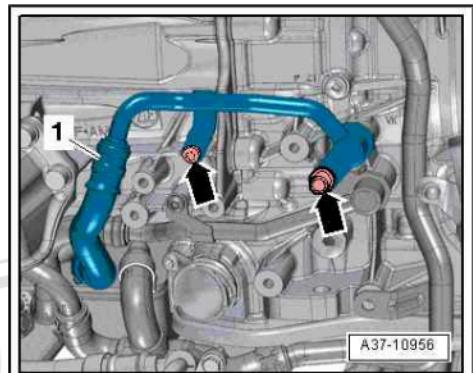
Disregard -item 1-.



Note

Place a cloth below to catch escaping ATF.

- Remove bolts -arrows- and detach ATF line -1- from gearbox.
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .



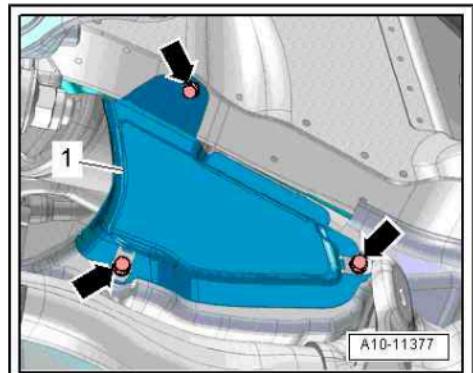
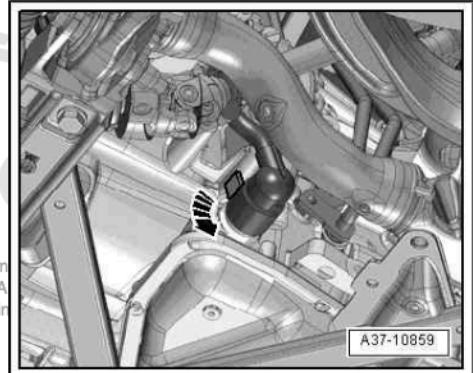
Caution

The gearbox control unit (mechatronic unit) can be damaged by electrostatic discharge.

- ◆ *Do not touch contact pins in gearbox connector with bare hands.*

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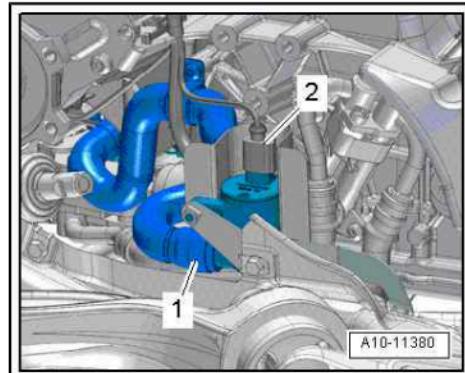
- Touch gearbox housing with your hand (**without gloves**) to discharge any static electricity.
- Turn fastener anti-clockwise -arrow- and unplug electrical connector on gearbox.
- Move electrical wiring harness clear on gearbox.
- Remove bolts -arrows- and detach heat shield (left-side) -1-.



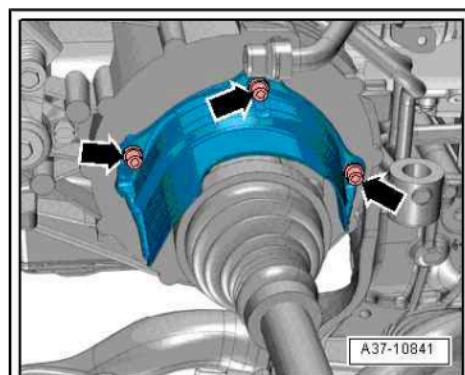
- Unplug electrical connector -2- on coolant valve for gearbox - N488- .



Disregard -item 1-.



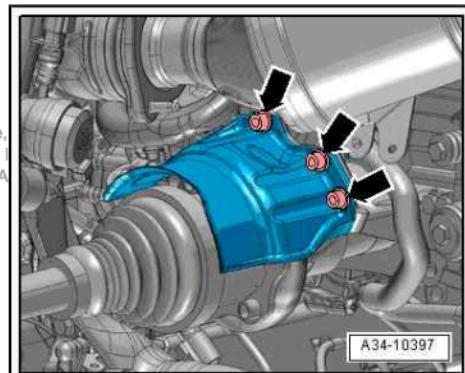
- Remove bolts -arrows- and detach heat shield for drive shaft (right-side).



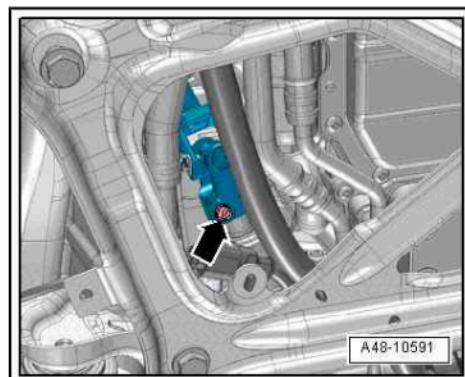
- Remove bolts -arrows- and detach heat shield for drive shaft (left-side).

- Unbolt drive shafts (left and right) from flange shafts of gearbox ⇒ **Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft**

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- Detach intermediate steering shaft from steering rack and telescope splines upwards ⇒ **Running gear, axles, steering; Rep. gr. 48 ; Steering column; Removing and installing intermediate steering shaft** .

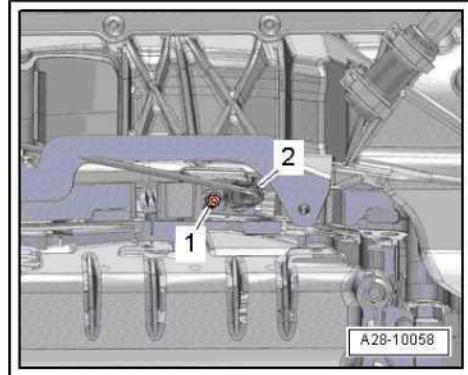


- Unplug electrical connectors -2- for engine speed sender - G28- and move wiring clear.



Note

Disregard -item 1-.

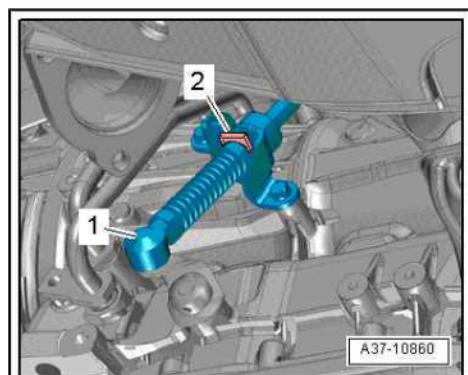


- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.
- Pry off retaining clip -2- and detach selector lever cable from gearbox.

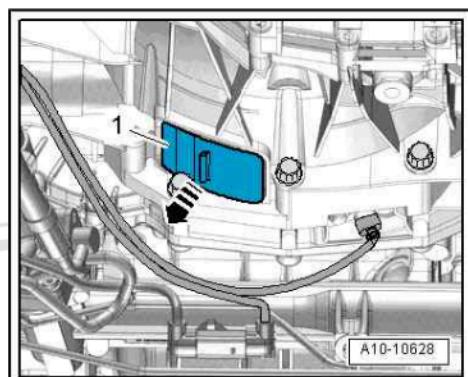


Note

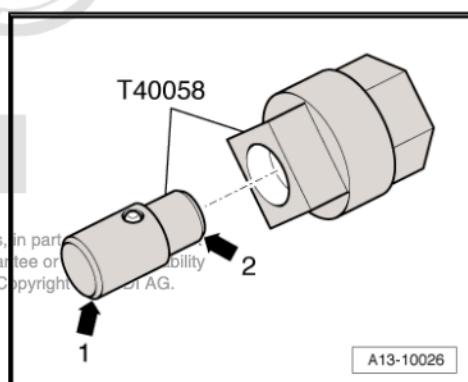
Do not bend or kink the selector lever cable.



- Pull cover -1- off bottom of gearbox -arrow-.



- Insert guide stud of adapter -T40058- as follows:
 - The larger diameter -arrow 1- faces engine.
 - The smaller diameter -arrow 2- faces adapter.

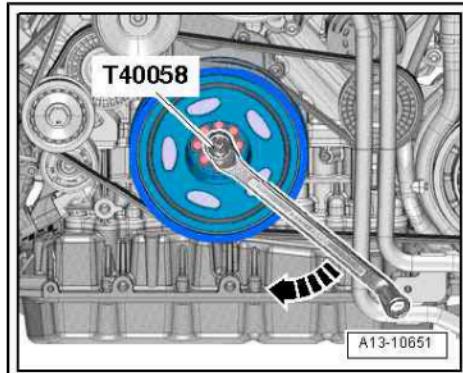


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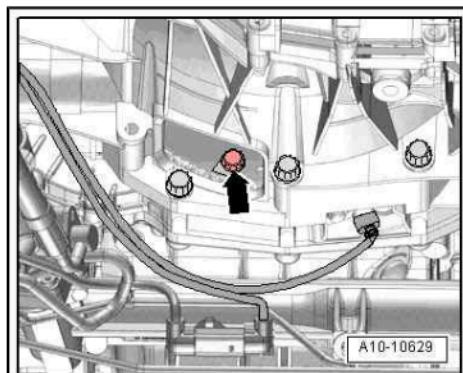
- To slacken bolts securing torque converter to drive plate, counterhold crankshaft with adapter - T40058- .



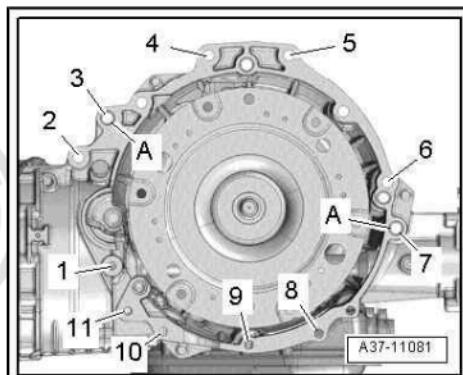
When you then turn the crankshaft, only turn crankshaft in direction of engine rotation -arrow-.



- Remove 6 bolts -arrow- for torque converter (turn crankshaft 60° in direction of engine rotation each time).

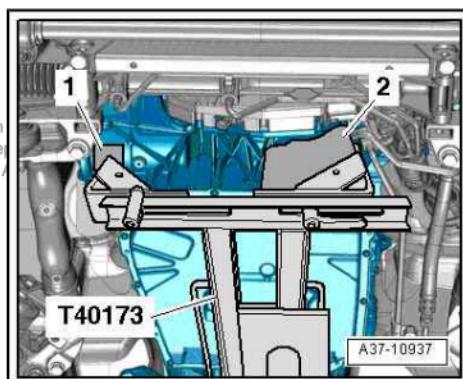


- Remove bolt -1- for starter.
- Detach starter from gearbox but do not remove starter.
- Remove remaining engine/gearbox securing bolts -6 ... 11-; leave bolt -7- screwed in hand-tight.



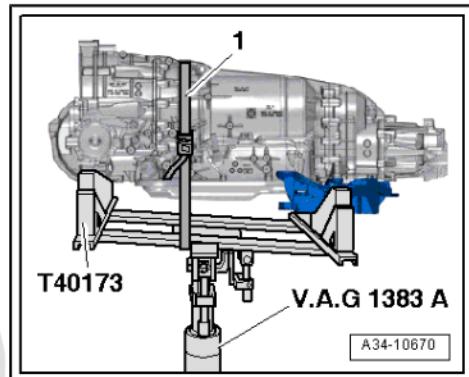
Caution

Risk of leaks on ATF oil pan. Protected by copyright. Copying for private or commercial purposes, in part or in full, is only permitted with the express written permission of AUDI AG. AUDI AG does not guarantee or accept any liability for unauthorized use.
 ♦ Do not apply gearbox support T40173 at ATF oil pan.



- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - T40173- (already prepared) underneath gearbox.
- Gearbox support must be positioned as follows at front of gearbox:
 - On left side of gearbox, mounting block -2- engages in opening for dual-mass flywheel on gearbox housing.
 - On right side of gearbox, gearbox support is applied to differential housing. Place flat rubber block -1- between the two to protect housing.

- Use tensioning strap -1- to secure gearbox.

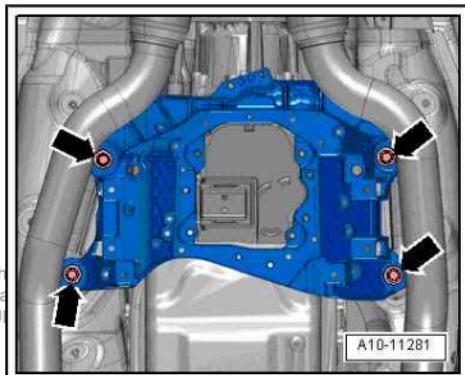


Note

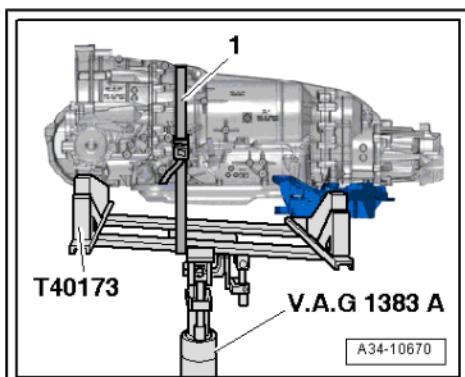
For illustration purposes, the gearbox support - T40173- is not shown.

- Remove bolts -arrows- for tunnel cross member.

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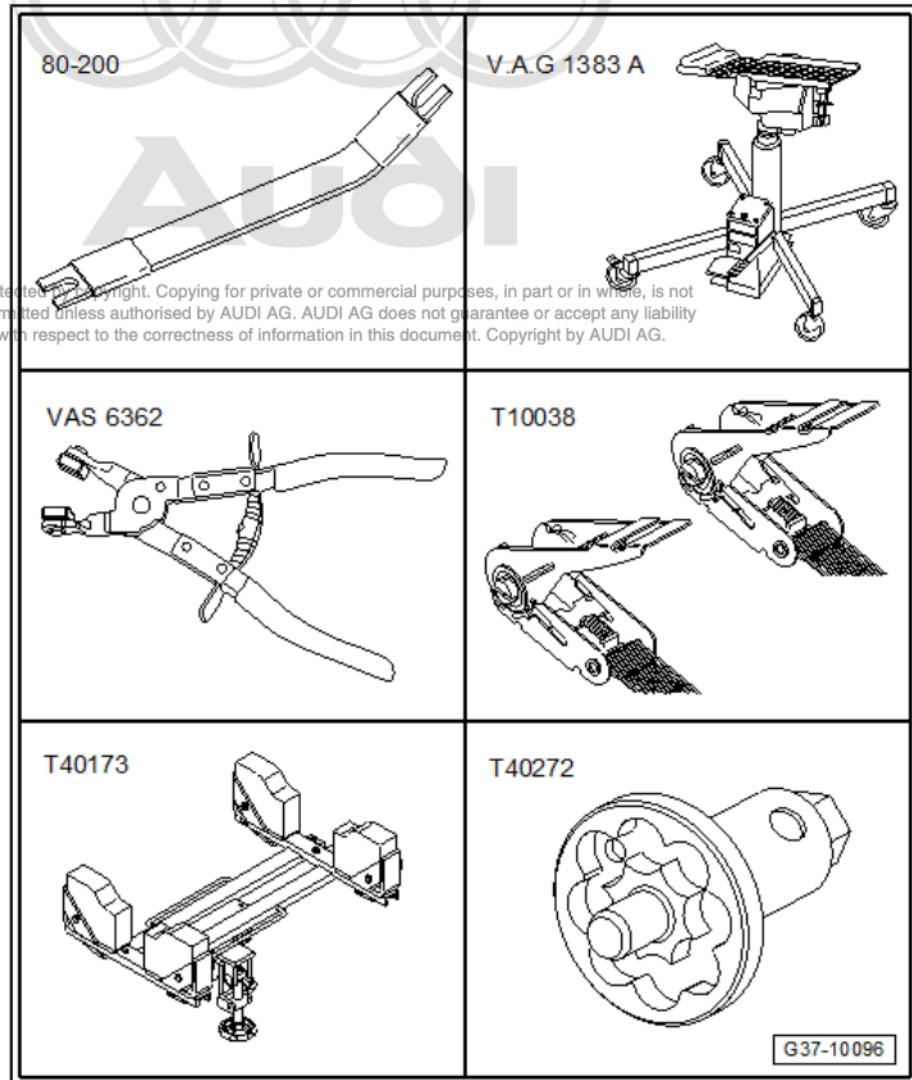


- Remove the last bolt securing the gearbox to the engine.
- Detach gearbox from engine and lower carefully using engine and gearbox jack - V.A.G 1383 A- .



2.1.3 Removing gearbox - vehicles with 4.0 ltr. TFSI engine

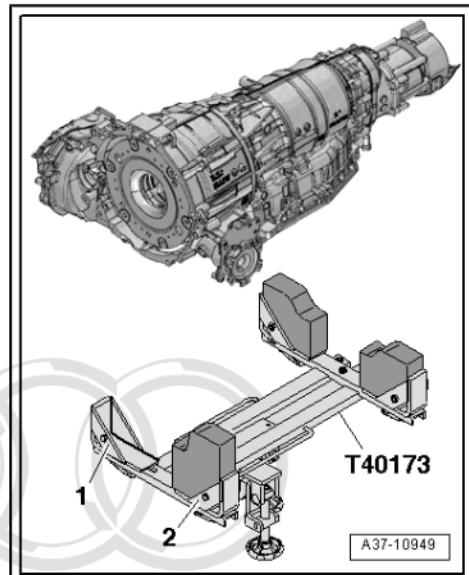
Special tools and workshop equipment required



- ◆ Removal lever - 80 - 200-
- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Hose clip pliers - VAS 6362-
- ◆ Tensioning strap - T10038-
- ◆ Gearbox support - T40173-
- ◆ Turning over tool - T40272-

Preparing gearbox support - T40173- :

- Mounting block attached at -position 1- must be removed.
- Mounting block attached at -position 2- must be rotated so that the longer side faces upwards, as shown in illustration.



Removing

- Bring front wheels into straight-ahead position.

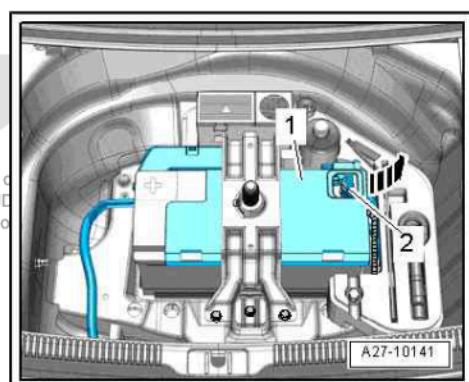


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When disconnecting the battery there is a risk of irreparable damage to electronic components.

- ◆ Observe notes on procedure for disconnecting the battery.



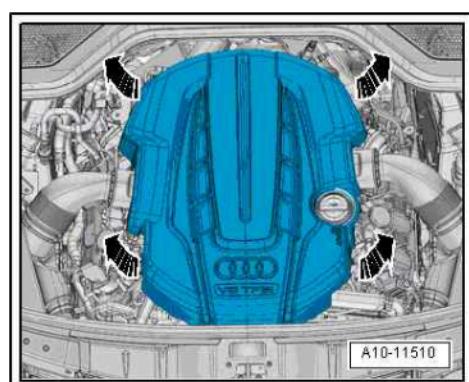
- Disconnect earth wire -2- from battery terminal ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Remove engine cover panel -arrows-.



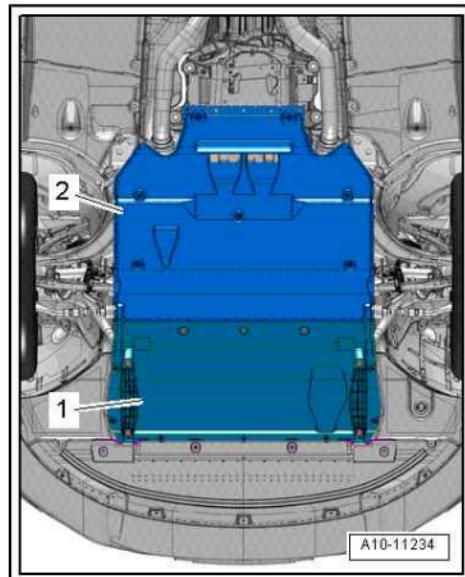
WARNING

There is a risk of fire and/or damage if the engine cover panel is missing.

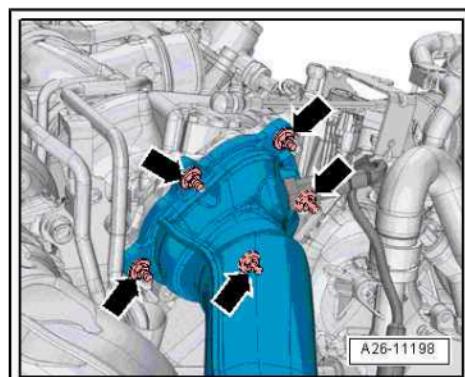
- ◆ The engine cover panel **MUST** be fitted before the bonnet is closed.
- ◆ The engine must not be started and the vehicle must not be driven if the bonnet is closed and the engine cover panel is not fitted.



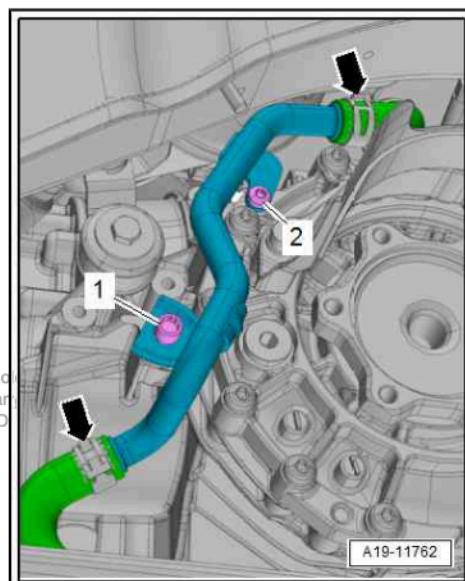
- Remove noise insulation -1- and -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



- Remove catalytic converters (left and right) ⇒ Rep. gr. 26 ; Emission control system; Removing and installing catalytic converter .

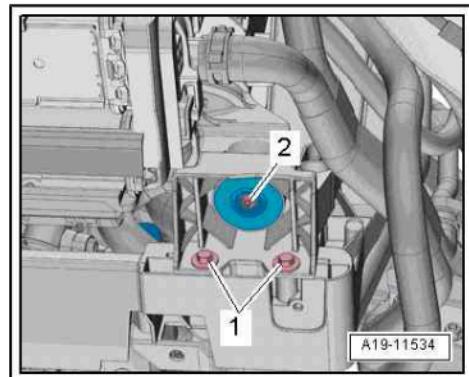


- Remove coolant pipe on gearbox (right-side) ⇒ Rep. gr. 19 ; Coolant pipes; Removing and installing coolant pipes .

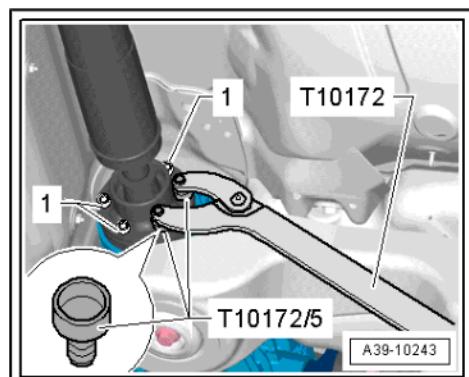


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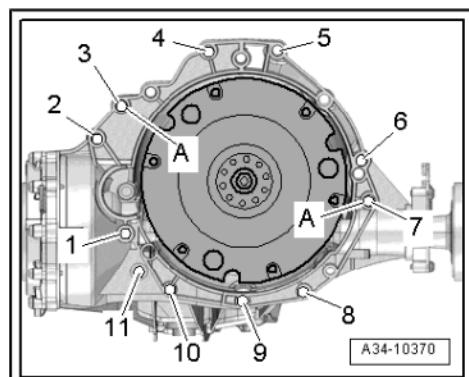
- Remove radiator with cowl ⇒ Rep. gr. 19 ; Radiator/radiator fans; Removing and installing radiator .



- Remove propshaft ⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft .
- Remove ATF cooler [⇒ page 108](#) .



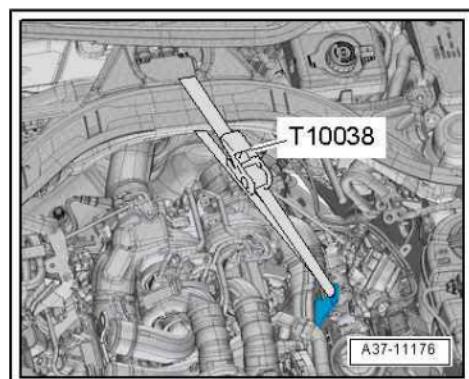
- Remove bolts -2 ... 5- securing gearbox to engine (accessible from above).



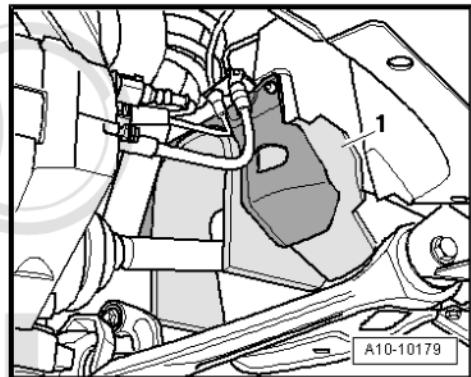
- Fit body brace in installation position and screw in bolts hand-tight.
- Secure engine with tensioning strap - T10038- as shown in illustration.



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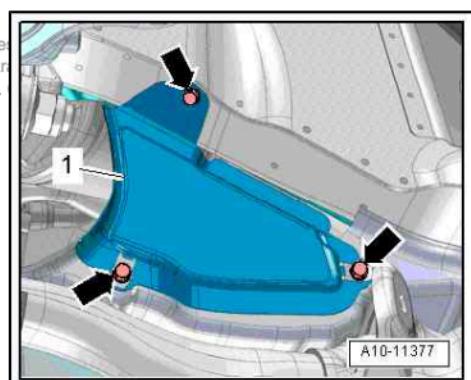


- Remove cover -1- for drive shaft from wheel housing (both sides) ➤ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .



- Remove bolts -arrows- and detach heat shield (left-side) -1-.

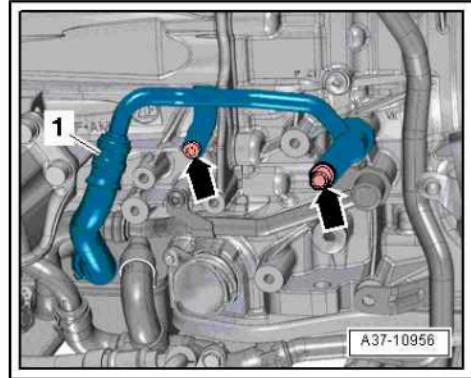
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Note

Place a cloth below to catch escaping ATF.

- Remove bolts -arrows- and detach ATF line -1- from gearbox.
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .

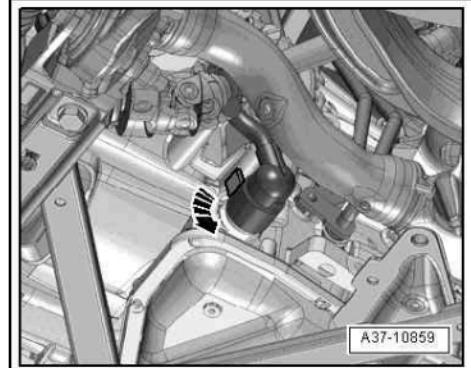


Caution

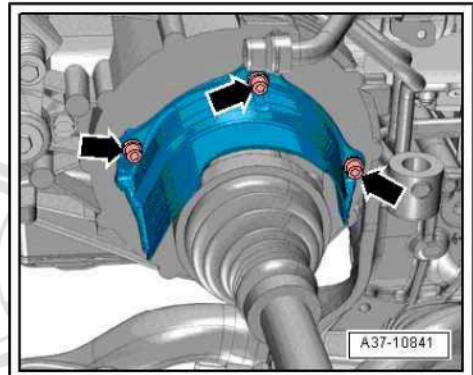
The gearbox control unit (mechatronic unit) can be irreparably damaged by electrostatic discharge.

- ◆ Do not touch contact pins in gearbox connector with bare hands.

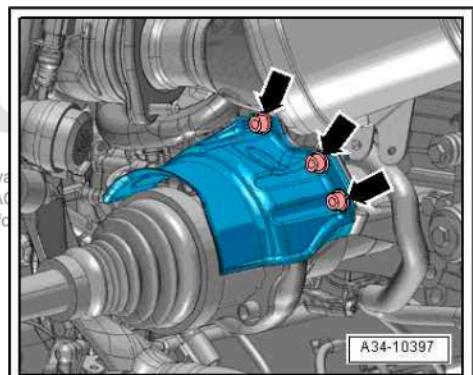
- Touch gearbox housing with your hand (without gloves) to discharge any static electricity.
- Turn fastener anti-clockwise -arrow- and unplug electrical connector on gearbox.
- Move wiring harness clear on gearbox.



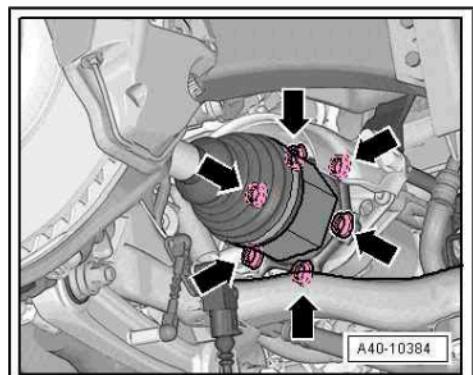
- Remove bolts -arrows- and detach heat shield for drive shaft (right-side).



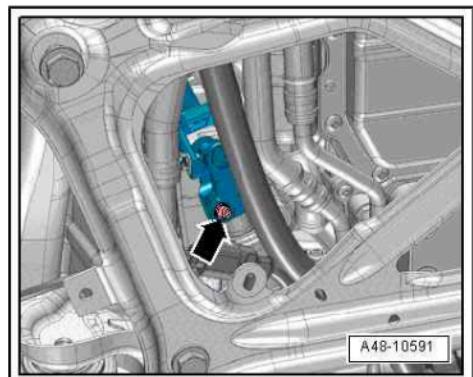
- Remove bolts -arrows- and detach heat shield for drive shaft (left-side).



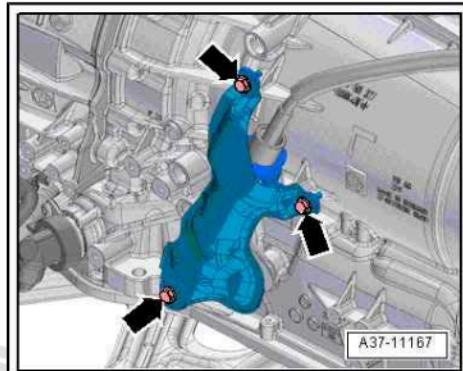
- Unbolt drive shafts (left and right) from flange shafts of gearbox ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



- Detach intermediate steering shaft from steering rack and telescope splines upwards ⇒ Running gear, axles, steering; Rep. gr. 48 ; Steering column; Removing and installing intermediate steering shaft .



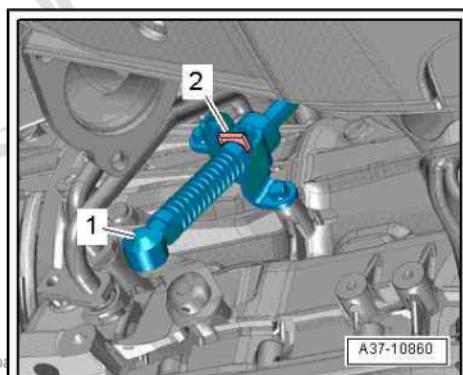
- Remove bolts -arrows- and detach heat shield.



- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.
- Pry off retaining clip -2- and detach selector lever cable from gearbox.



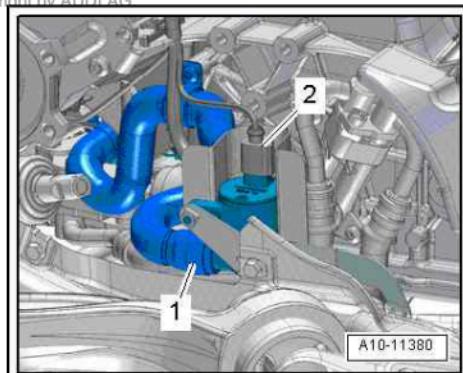
Do not bend or kink the selector lever cable.



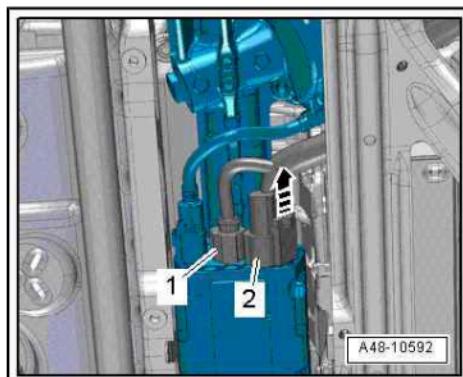
- Release hose clip -1- and detach coolant hose.



Disregard -item 2-.



- Unplug electrical connector -2- from power steering control unit - J500- (to do so, release retainer -arrow- and press down release catch).
- Unplug electrical connector -1- on power steering control unit - J500- .

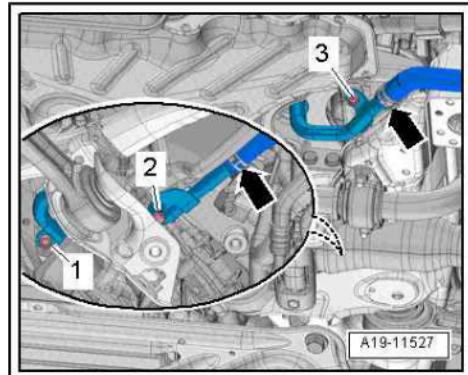


- Slacken bolt -2- and remove bolts -1, 3-.

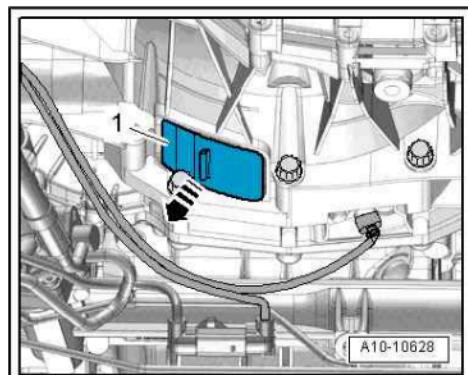


Note

Disregard -arrows-.



- Pull cover -1- off bottom of gearbox -arrow-.



- Apply turning over tool - T40272- to bolts on vibration damper.
- The semi-circular recess -arrow A- on turning over tool - T40272- faces semi-circular recess -arrow B- on vibration damper.



Note

Disregard notch on turning over tool - T40272- .

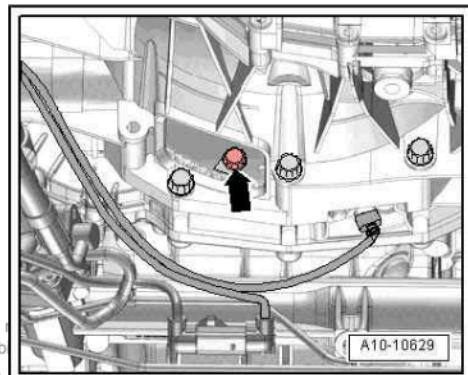
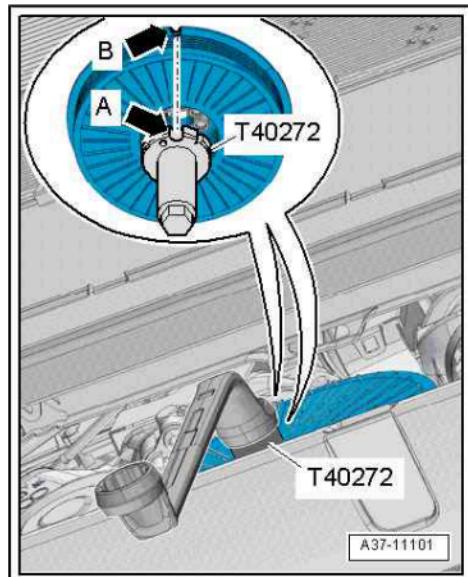
- To slacken bolts for flywheel, counterhold crankshaft with turning over tool - T40272- and angled ring spanner.



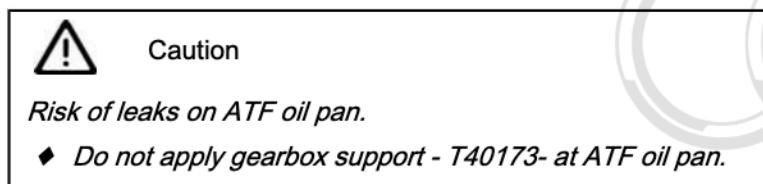
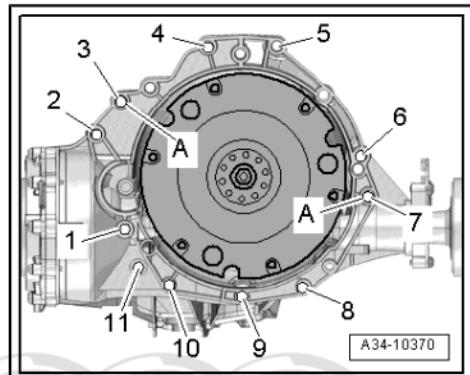
Note

When you then turn the crankshaft, only turn crankshaft in direction of engine rotation -arrow-.

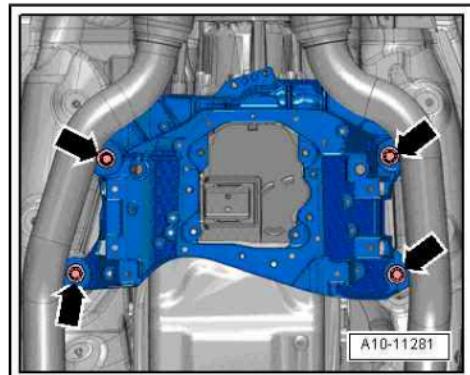
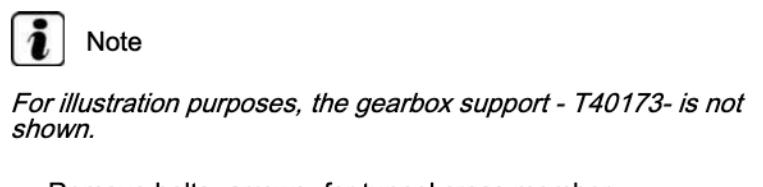
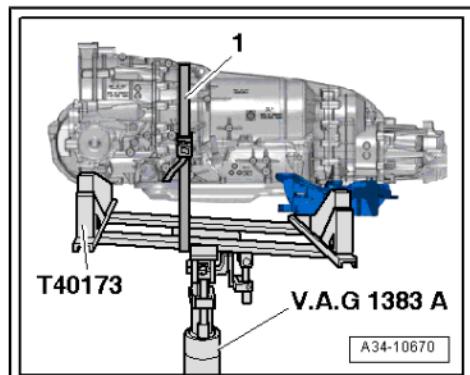
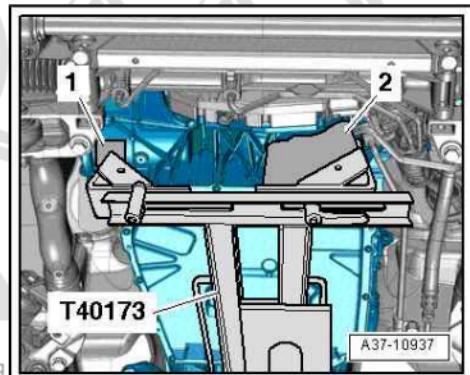
- Remove 6 bolts -arrow- for torque converter (turn crankshaft 60° in direction of engine rotation each time).



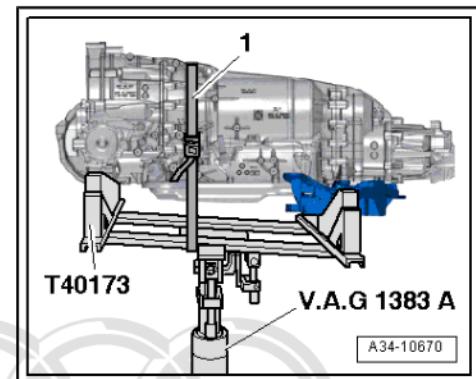
- Remove bolt -1- for starter.
- Detach starter from gearbox but do not remove starter.
- Remove remaining engine/gearbox securing bolts -6 ... 11-; leave bolt -7- screwed in hand-tight.



- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - T40173- (already prepared) underneath gearbox.
- Gearbox support must be positioned as follows **at front of gearbox:**
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- On left side of gearbox, mounting block -2- engages in opening for dual-mass flywheel on gearbox housing.
- On right side of gearbox, gearbox support is applied to differential housing. Place flat rubber block -1- between the two to protect housing.
- Use tensioning strap -1- to secure gearbox.



- Remove the last bolt securing the gearbox to the engine.
- Detach gearbox from engine and lower carefully using engine and gearbox jack - V.A.G 1383 A- .

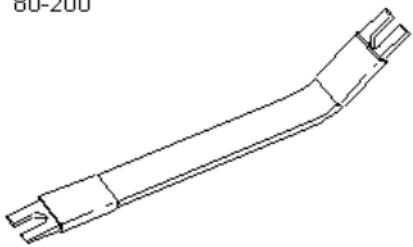
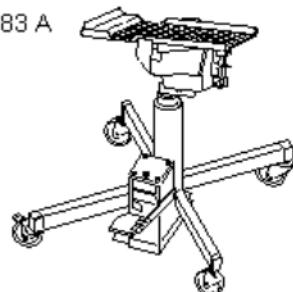
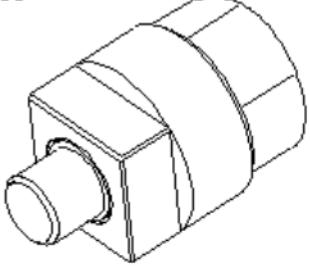
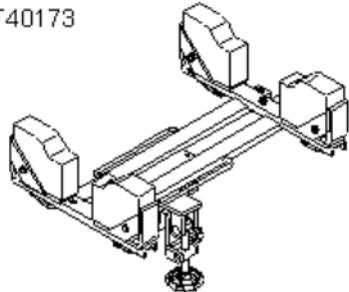
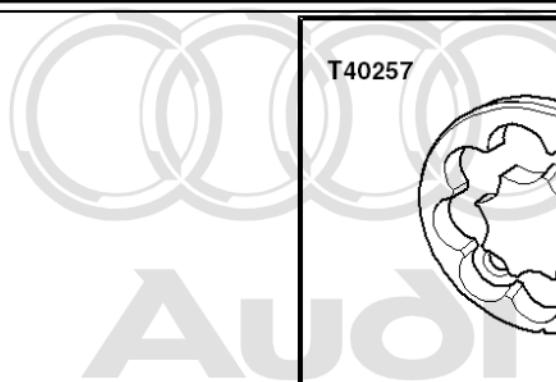
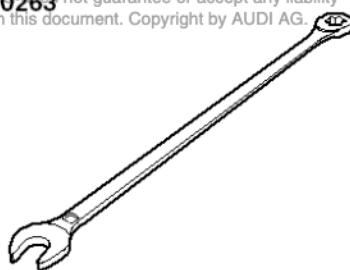


2.1.4 Removing gearbox - vehicles with 3.0 ltr. TDI engine

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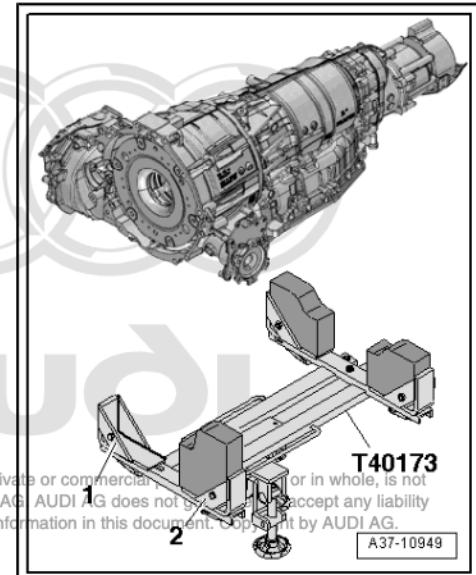
Special tools and workshop equipment required

80-200		V.A.G 1383 A	
VAS 6122		T40058	
T40173			
		G37-10093	
			T40257
			
Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.			W00-11009
			T40263
			W00-10993
			T40314

- ◆ Removal lever - 80 - 200-
- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Engine bung set - VAS 6122-
- ◆ Gearbox support - T40173-
- ◆ Turning over tool - T40257-
- ◆ Wrench 21 mm - T40263-
- ◆ Adapter -T40314-

Preparing gearbox support - T40173- :

- Mounting block attached at -position 1- must be removed.
- Mounting block attached at -position 2- must be rotated so that the longer side faces upwards, as shown in illustration.



Removing

- Bring front wheels into straight-ahead position.

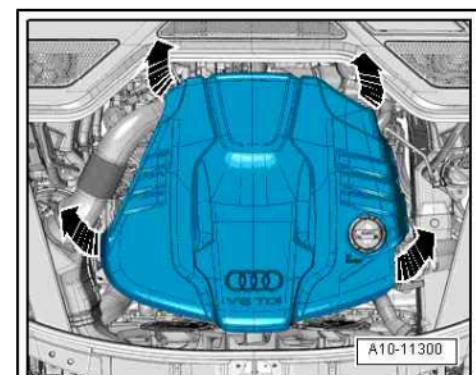
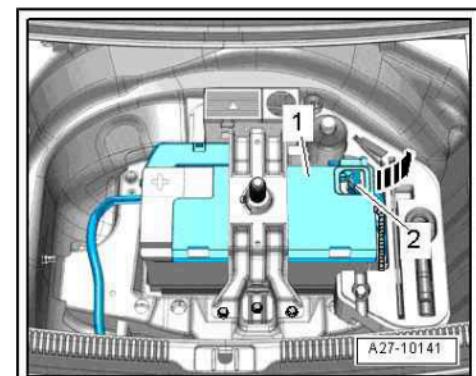


Caution

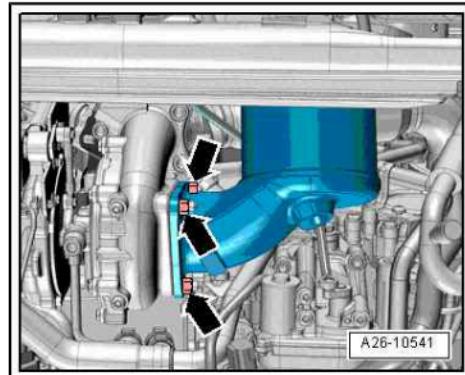
When disconnecting the battery there is a risk of irreparable damage to electronic components.

- ◆ *Observe notes on procedure for disconnecting the battery.*

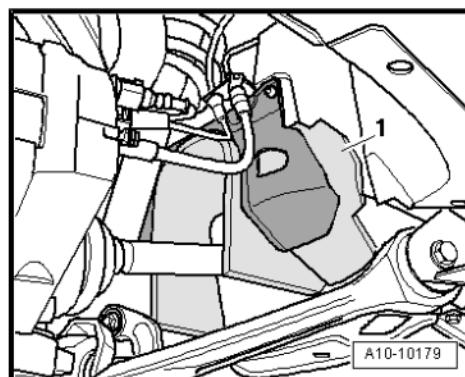
- Disconnect earth wire -2- from battery terminal ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Remove engine cover panel -arrows-.
- Drain coolant ⇒ Rep. gr. 19 ; Cooling system/coolant; Draining and filling cooling system .



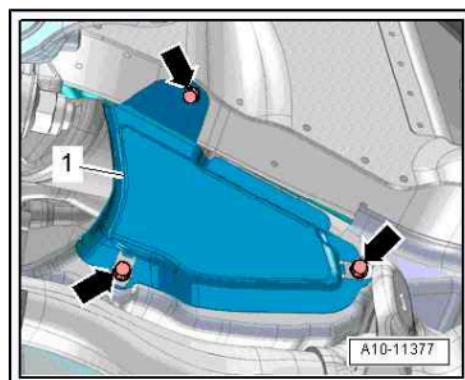
- Remove particulate filter ⇒ Rep. gr. 26 ; Emission control system; Removing and installing particulate filter .



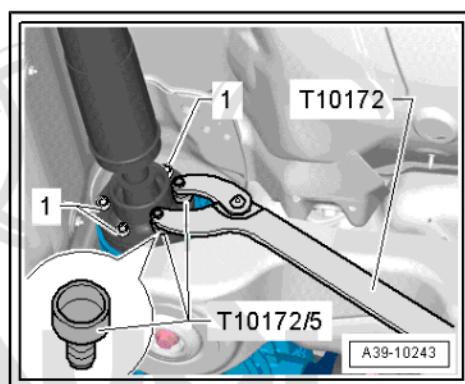
- Remove front wheels ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Remove cover -1- for drive shaft from wheel housing (both sides) ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .



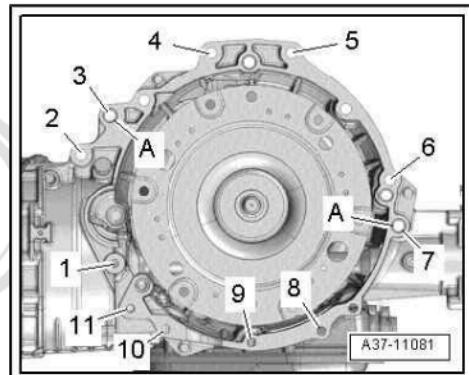
- Remove bolts (left and right) -arrows- and detach heat shield -1-.



- Remove propshaft ⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft .
- Remove ATF cooler [⇒ page 108](#) .



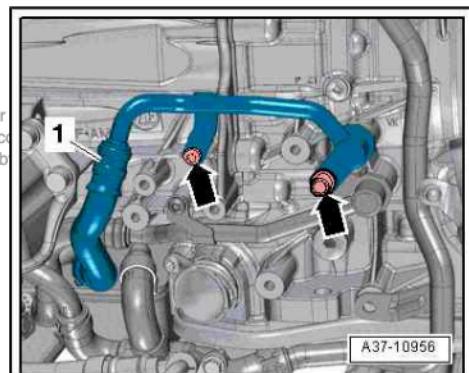
- Remove bolts -4 and 5- securing gearbox to engine (accessible from above).



Note

Place a cloth below to catch escaping ATF.
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- Remove bolts -arrows- and detach ATF line -1- from gearbox.
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .

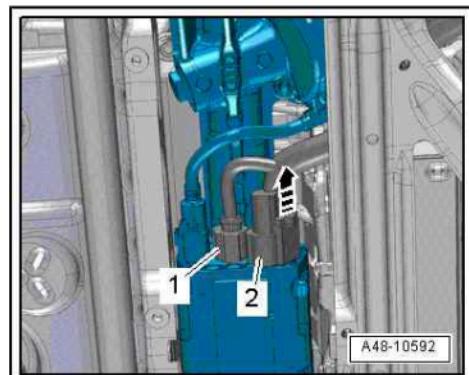
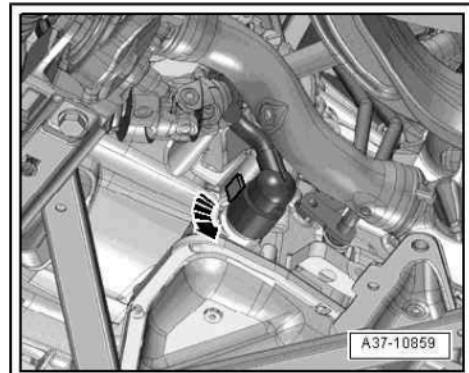


Caution

The gearbox control unit (mechatronic unit) can be damaged by electrostatic discharge.

- Do not touch contact pins in gearbox connector with bare hands.

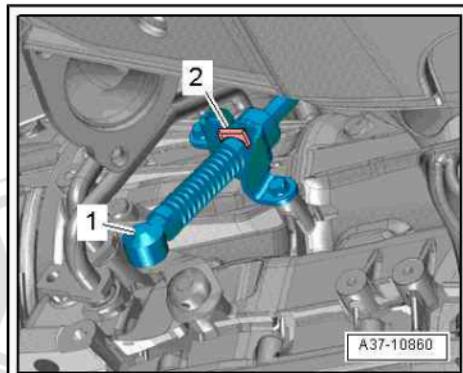
- Touch gearbox housing with your hand (without gloves) to discharge any static electricity.
- Turn fastener anti-clockwise -arrow- and unplug electrical connector on gearbox.
- Move electrical wiring harness clear on gearbox.
- Unplug electrical connector -2- for steering rack (to do so, push retainer towards rear -arrow- and press down release catch).
- Unplug electrical connector -1-.
- Move electrical wiring harness clear.



- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.
- Pry off retaining clip -2- and detach selector lever cable from gearbox.

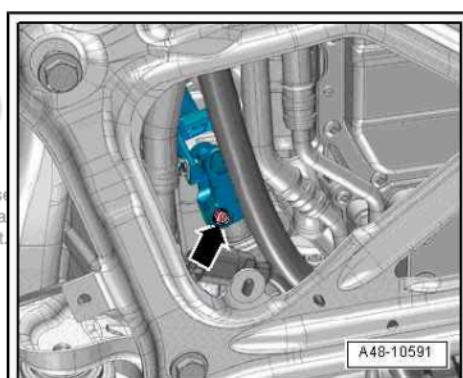


Do not bend or kink the selector lever cable.

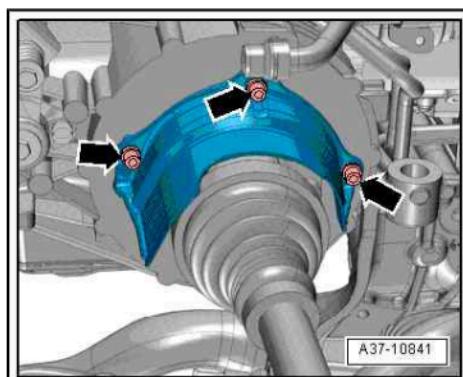


- Detach intermediate steering shaft from steering rack and telescope splines upwards ⇒ Running gear, axles, steering; Rep. gr. 48 ; Steering column; Removing and installing intermediate steering shaft .

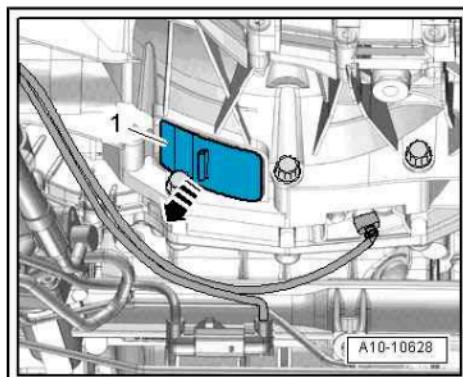
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- Remove bolts -arrows- and detach heat shield for drive shaft (right-side).
- Unbolt drive shafts (left and right) from flange shafts of gearbox ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .

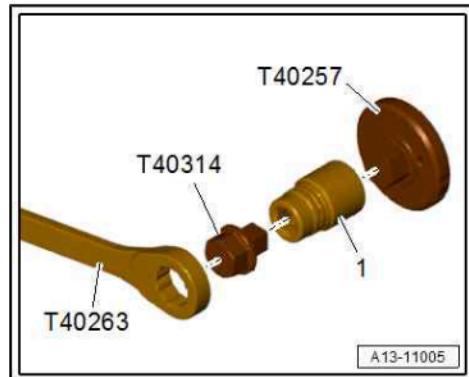


- Pull cover -1- off bottom of gearbox -arrow-.



- Fit tools together, as shown in illustration.

1 - Socket (21 mm) for 1/2" drive

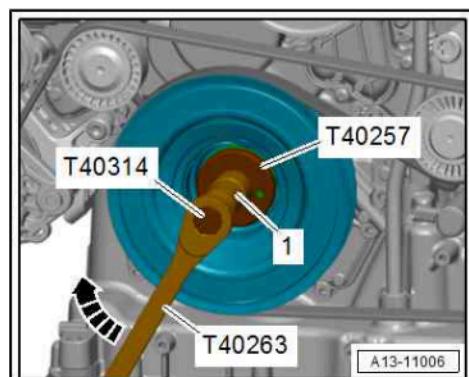


A13-11005

- To slacken bolts for dual-mass flywheel, counterhold crank-shaft.

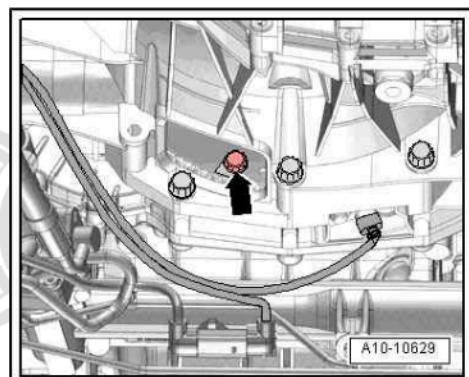


When you then turn the crankshaft, only turn crankshaft in direction of engine rotation -arrow-.



A13-11006

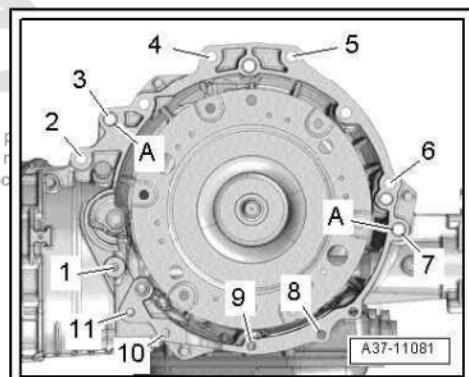
- Remove 6 bolts -arrow- for torque converter (turn crankshaft 60° in direction of engine rotation each time).



A10-10629

- Remove remaining engine/gearbox securing bolts -2, 3, 6 ... 11-; leave bolt -7-; screwed in hand-tight.
- Remove bolt -1- for starter.
- Detach starter from gearbox **but do not remove starter**.

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A37-11081

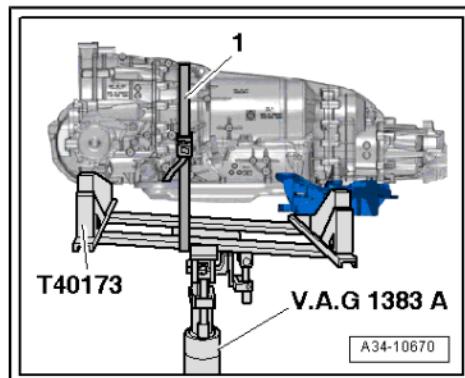
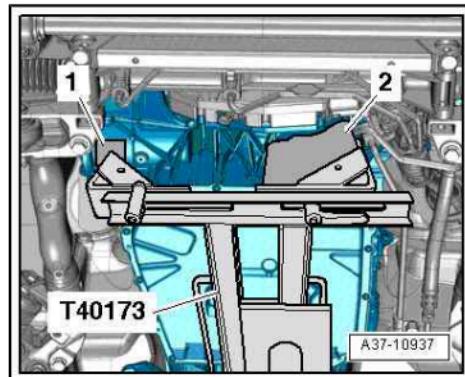


Caution

Risk of leaks on ATF oil pan.

- ◆ *Do not apply gearbox support - T40173- at ATF oil pan.*

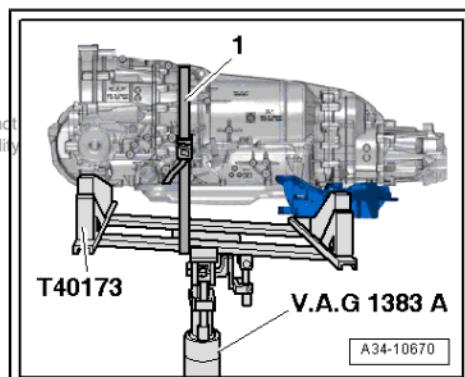
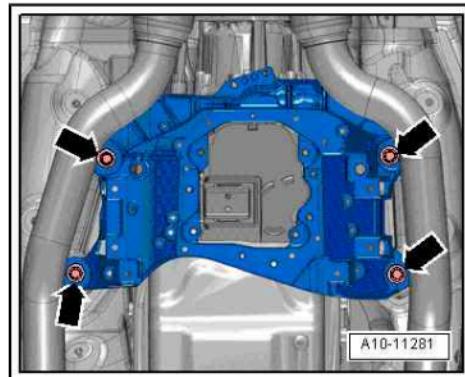
- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - T40173- (already prepared) underneath gearbox.
- Gearbox support must be positioned as follows at front of gearbox:
 - On left side of gearbox, mounting block -2- engages in opening for dual-mass flywheel on gearbox housing.
 - On right side of gearbox, gearbox support is applied to differential housing. Place flat rubber block -1- between the two to protect housing.
- Use tensioning strap -1- to secure gearbox.



Note

For illustration purposes, the gearbox support - T40173- is not shown.

- Remove bolts -arrows- for tunnel cross member.
- Remove the last bolt securing the gearbox to the engine.
- Detach gearbox from engine and lower carefully using engine and gearbox jack - V.A.G 1383 A- .

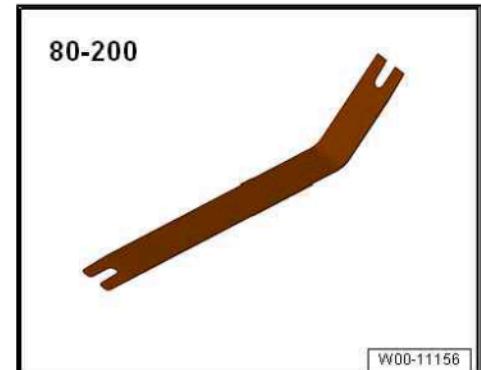


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2.1.5 Removing gearbox - vehicles with 3.0 ltr. TDI biturbo engine

Special tools and workshop equipment required

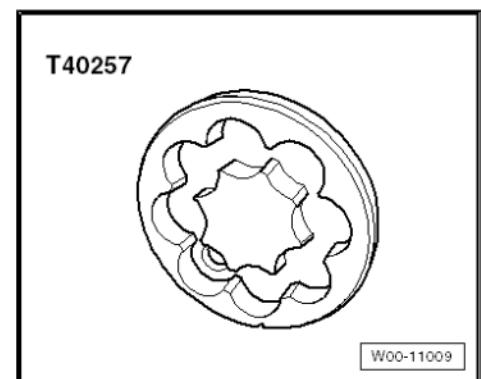
- ◆ Removal lever - 80 - 200-



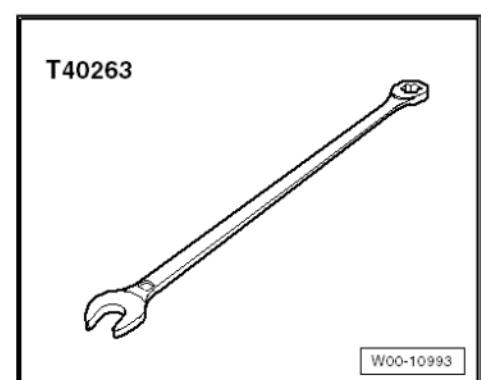
- ◆ Engine and gearbox jack - V.A.G 1383 A-



- ◆ Turning over tool - T40257-



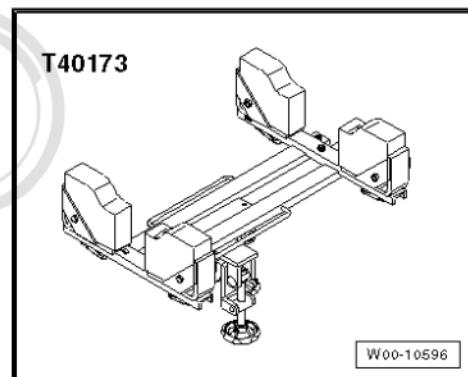
- ◆ Wrench 21 mm - T40263-



◆ Adapter -T40314-



◆ Gearbox support - T40173-

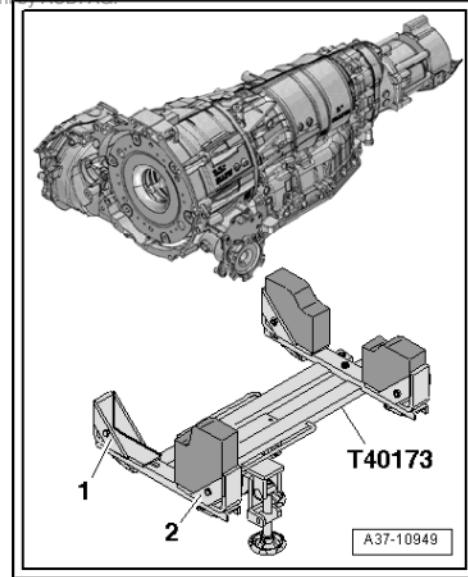


◆ M8x20 bolt

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Preparing gearbox support - T40173- :

- Mounting block attached at -position 1- must be removed.
- Mounting block attached at -position 2- must be rotated so that the longer side faces upwards, as shown in illustration.



Removing

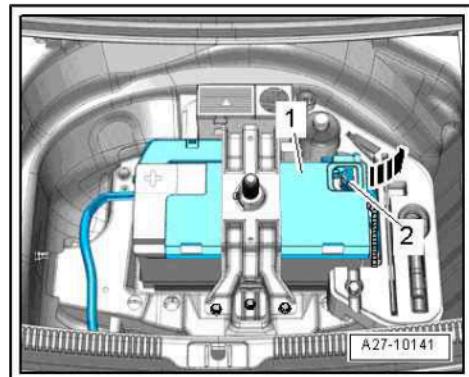
- Bring front wheels into straight-ahead position.



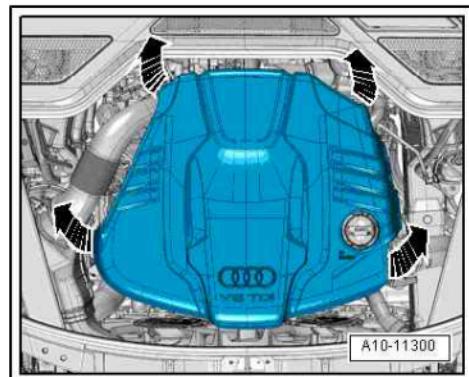
Caution

When disconnecting the battery there is a risk of irreparable damage to electronic components.

- ◆ *Observe notes on procedure for disconnecting the battery.*

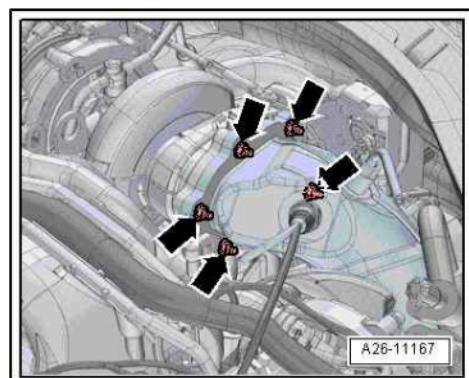


- Disconnect earth wire -2- from battery terminal ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Remove engine cover panel -arrows-.
- Remove plenum chamber partition panel ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Exploded view - plenum chamber partition panel .

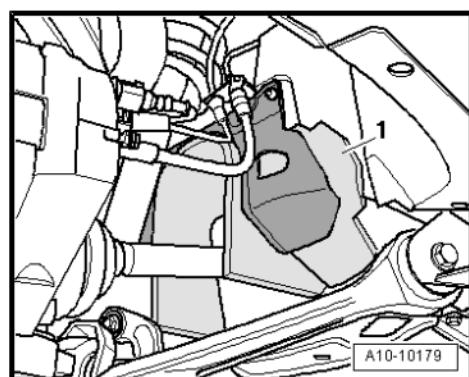


Procedure, parts and illustrations are not binding. Information about parts, important notes and safety information are not binding. Audi AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

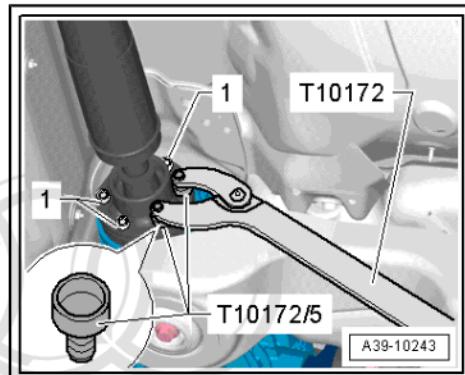
- Remove **starter/catalytic converter** ⇒ Rep. gr. 26 ; **Exhaust pipes/silencers**; Exploded view - silencers
- Drain coolant ⇒ Rep. gr. 19 ; Cooling system/coolant; Draining and filling cooling system .



- Remove front wheels ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Remove cover -1- for drive shaft from wheel housing (both sides) ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .

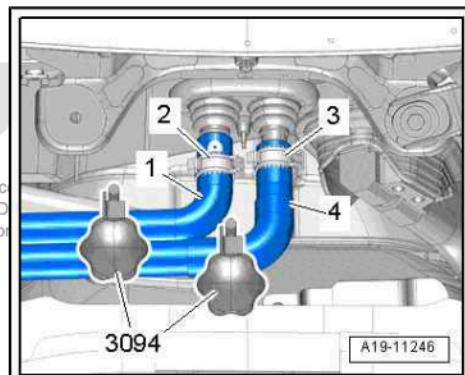


- Remove propshaft ⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft .
- Remove ATF cooler [⇒ page 108](#) .



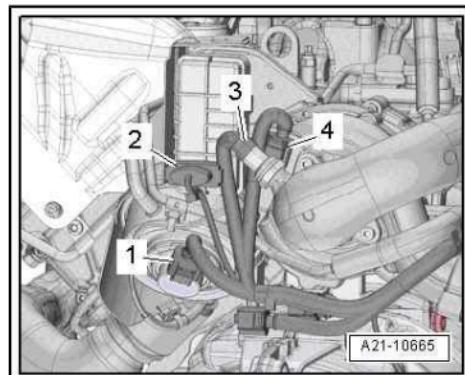
Place a cloth below to catch escaping coolant.

- Release hose clips -2 and 3- and disconnect coolant hoses -1 and 4- from heat exchanger for heater.

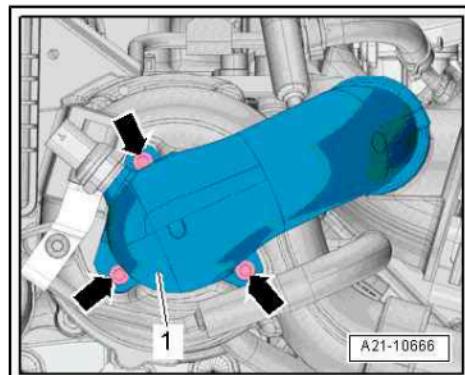


Disregard -3094- .

- Unplug electrical connectors -1 ... 4- and move wiring harness clear to one side.



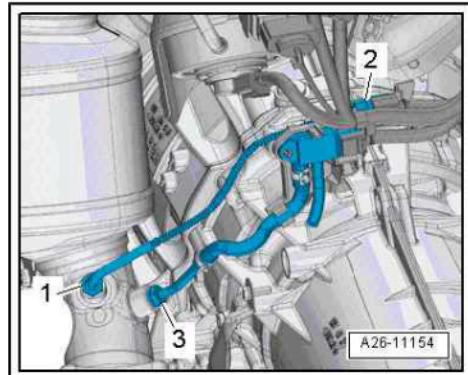
- Remove bolts -arrows- and detach air pipe -1-.



- Unplug electrical connector -2-.



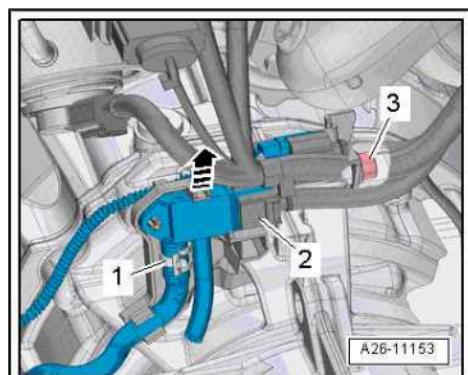
Disregard items -1 and 3-.



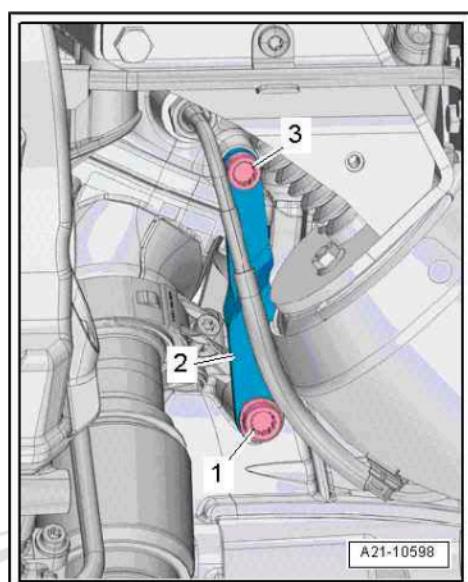
- Unplug electrical connector -2-.
- Remove bolt -3- and detach bracket with exhaust gas temperature sender 3 - G495- and pressure differential sender - G505- .



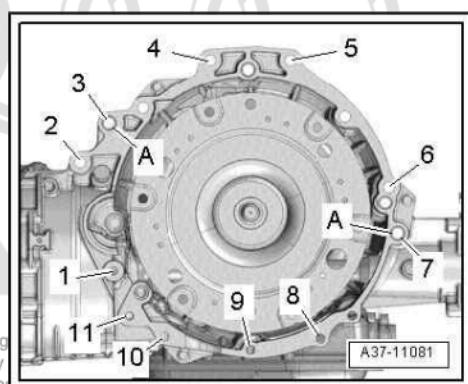
Items marked -1- and -arrow- can be disregarded.



- Remove bolt -1- (left and right).
- Slacken bolt -3- (left and right) on bracket -2- for turbocharger.



- Remove bolts -4 and 5- securing gearbox to engine (accessible from above).

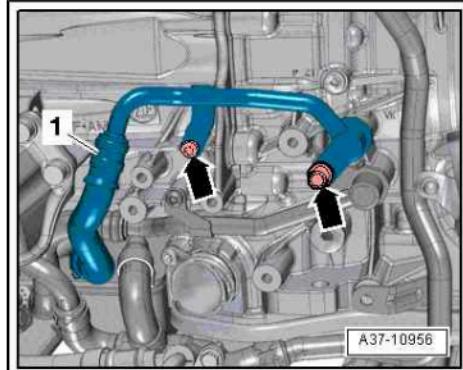


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 Note

Place a cloth below to catch escaping ATF.

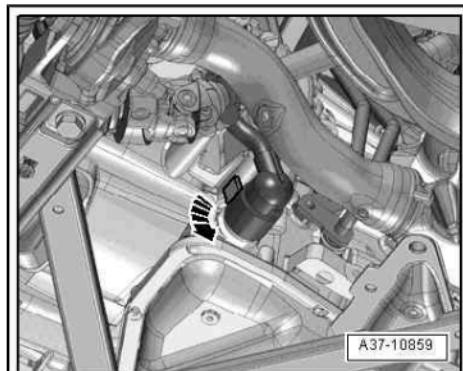
- Remove bolts -arrows- and detach ATF line -1- from gearbox.
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .



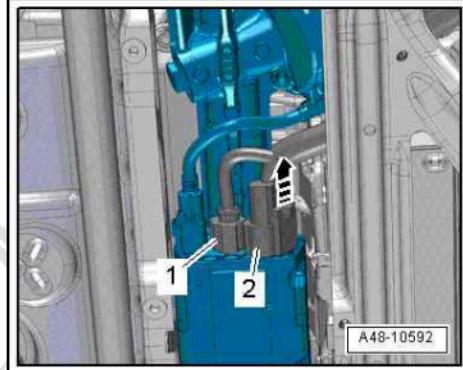
Caution

The gearbox control unit (mechatronic unit) can be damaged by electrostatic discharge.

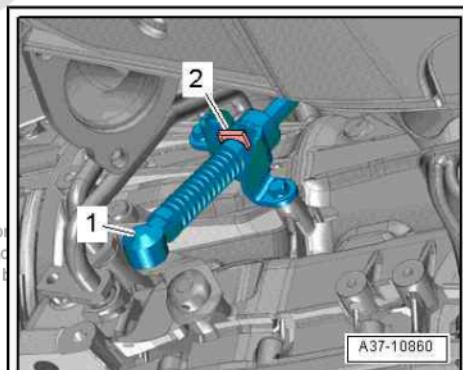
- ◆ Do not touch contact pins in gearbox connector with bare hands.



- Touch gearbox housing with your hand (without gloves) to discharge any static electricity.
- Turn fastener anti-clockwise -arrow- and unplug electrical connector on gearbox.
- Move electrical wiring harness clear on gearbox.
- Unplug electrical connector -2- for steering rack (to do so, push retainer towards rear -arrow- and press down release catch).
- Unplug electrical connector -1-.
- Move electrical wiring harness clear.



- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.
- Pry off retaining clip -2- and detach selector lever cable from gearbox.

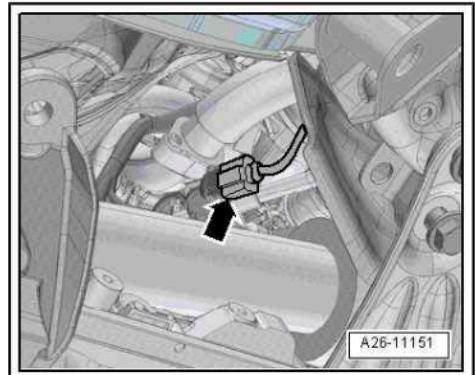


 Note

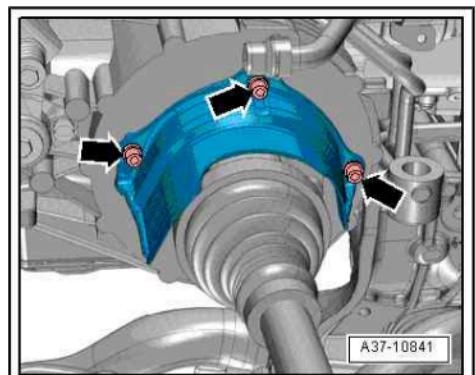
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Do not bend or kink the selector lever cable.

- Take electrical connector -arrow- out of bracket, unplug connector and move wiring clear.

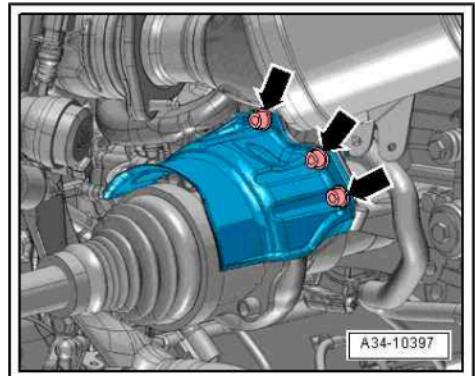


- Remove bolts -arrows- and detach heat shield for drive shaft (right-side).

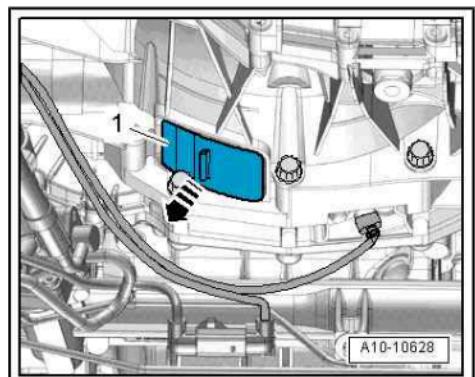


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- Remove bolts -arrows- and detach heat shield for drive shaft (left-side).
- Unbolt drive shafts (left and right) from flange shafts of gearbox → Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .

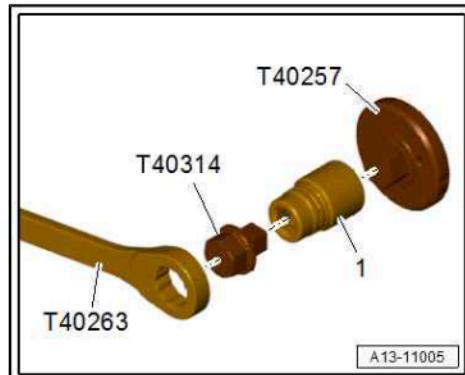


- Pull cover -1- off bottom of gearbox -arrow-.



- Fit tools together, as shown in illustration.

- 1 - Socket (21 mm) for 1/2" drive



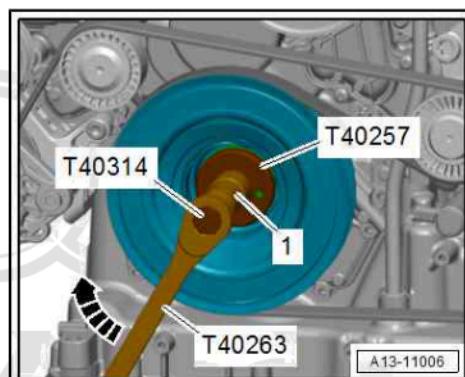
A13-11005

- To slacken bolts for dual-mass flywheel, counterhold crankshaft.



Note

- ◆ When you then turn the crankshaft, only turn crankshaft in direction of engine rotation -arrow-.
- ◆ In order to rotate the engine, access is via the engine compartment.

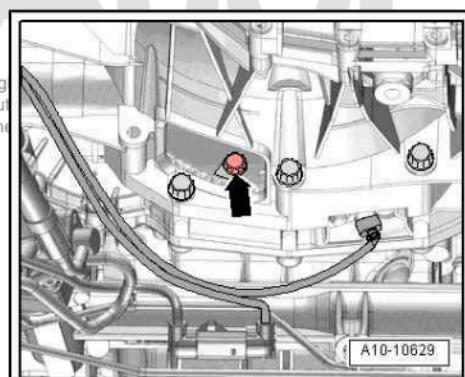


A13-11006

- Remove 6 bolts -arrow- for torque converter (turn crankshaft 60° in direction of engine rotation each time).

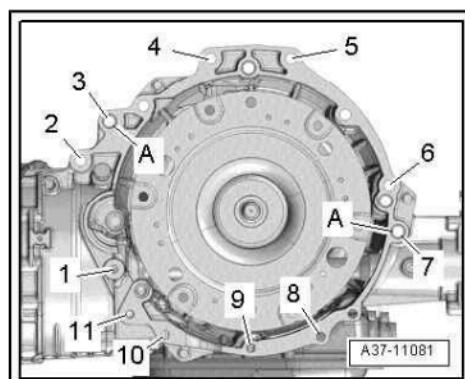
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A10-10629

- Remove remaining engine/gearbox securing bolts -2, 3, 6 ... 11-; leave bolt -7-; screwed in hand-tight.
- Remove bolt -1- for starter.
- Detach starter from gearbox but do not remove starter.



A37-11081

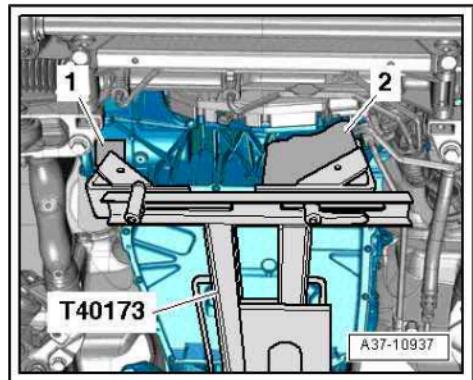


Caution

Risk of leaks on ATF oil pan.

- ◆ *Do not apply gearbox support - T40173- at ATF oil pan.*

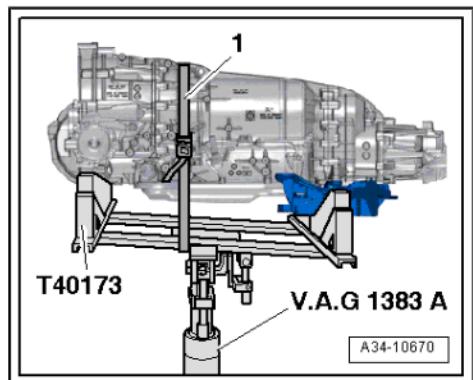
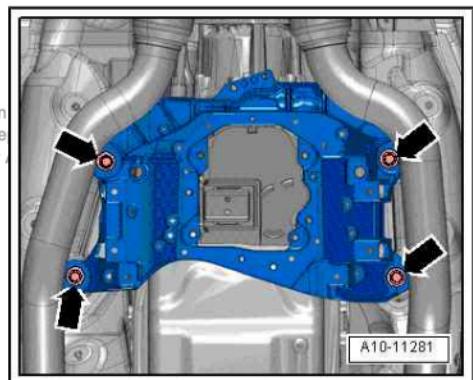
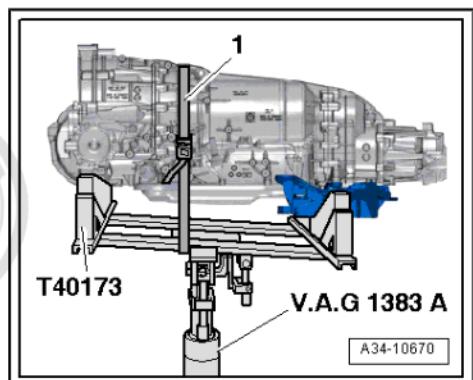
- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - T40173- (already prepared) underneath gearbox.
- Gearbox support must be positioned as follows at front of gearbox:
 - On left side of gearbox, mounting block -2- engages in opening for dual-mass flywheel on gearbox housing.
 - On right side of gearbox, gearbox support is applied to differential housing. Place flat rubber block -1- between the two to protect housing.
- Use tensioning strap -1- to secure gearbox.



Note

For illustration purposes, the gearbox support T40173 is not shown.
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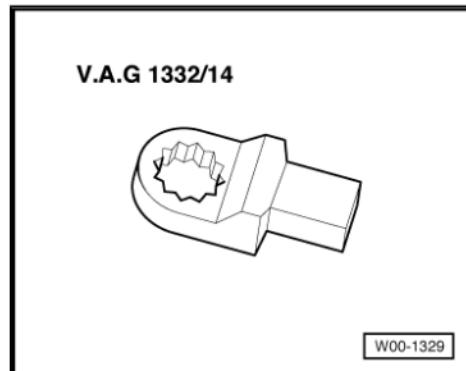
- Remove bolts -arrows- for tunnel cross member.
- Remove the last bolt securing the gearbox to the engine.
- Detach gearbox from engine and lower carefully using engine and gearbox jack - V.A.G 1383 A- .



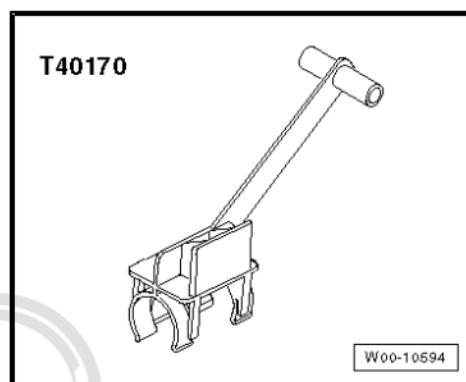
2.2 Installing gearbox

Special tools and workshop equipment required

- ◆ Ring spanner insert, 16 mm - V.A.G 1332/14-



- ◆ Transportation lock - T40170-



Procedure



Note

- ◆ Renew bolts which are tightened by turning through a specified angle.
- ◆ Renew self-locking nuts and bolts, and seals, O-rings and gaskets.
- ◆ Secure all hose connections with the correct type of hose clips (same as original equipment) ⇒ Electronic parts catalogue.
- ◆ Re-attach all cable ties at the same locations when re-installing.

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(same as original equipment) ⇒ Electronic parts catalogue for damage resulting from the use of this document. Copyright by AUDI AG.

Tightening torques for installing gearbox ⇒ page 100

- Before fitting a replacement gearbox, always blow through the ATF cooler and ATF lines with compressed air (not more than 10 bar) ⇒ page 114 .
- Before installing, it is important to clean any residue from threads in cylinder block using a tap.
- When fitting a replacement gearbox: attach gearbox support, gearbox mounting and tunnel cross member to new gearbox ⇒ "3.1 Exploded view - assembly mountings", page 102 .

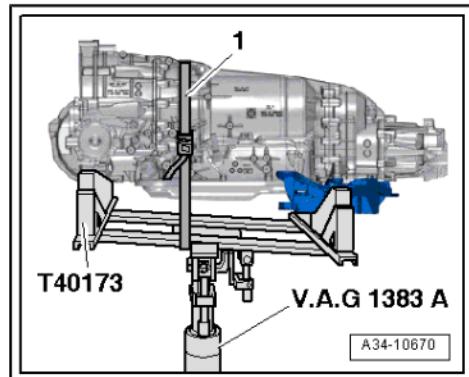
- Position gearbox on gearbox support - T40173- and secure with tensioning strap -1-, as shown in illustration.



Caution

Drive lugs on ATF pump can be damaged if torque converter is not fitted correctly.

- ◆ *Check installation dimension of torque converter ⇒ Servicing 8-speed automatic gearbox; Rep. gr. 32 ; Torque converter; Removing and installing torque converter .*

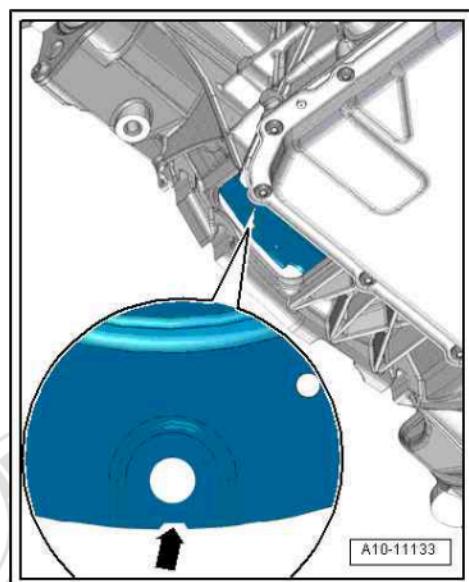


- Check whether aluminium bolts for engine/gearbox connection can be reused and mark bolts if necessary [⇒ page 101](#) .
- The following preparations must be made before joining the engine and gearbox:
- Turn torque converter until hole is visible next to notch -arrow- in recess in bottom of gearbox housing, as shown in illustration.

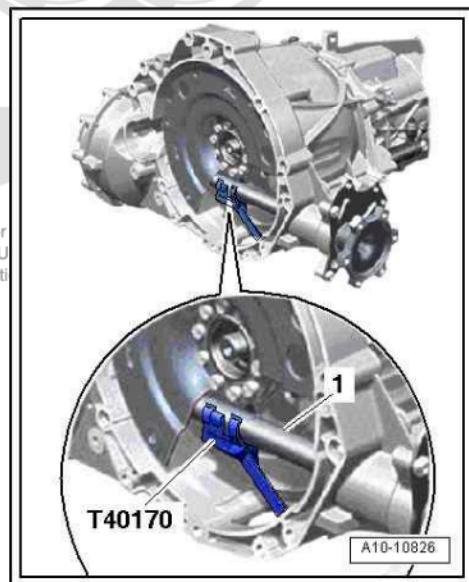


Note

There is only one notch on the circumference; turn the torque converter accordingly.

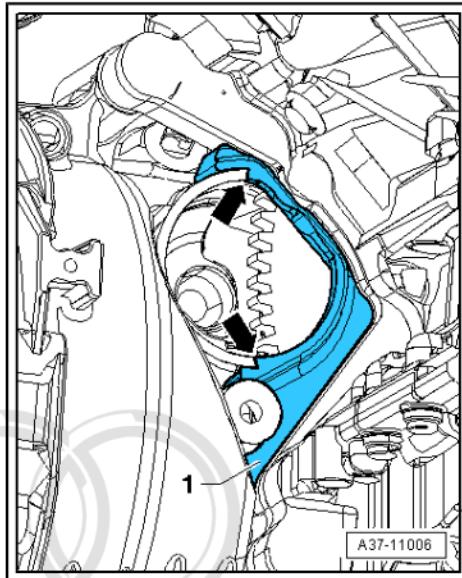


- Insert transportation lock - T40170- into gearbox housing from below and clamp onto flange shaft -1-.
- Check whether aluminium bolts for engine/gearbox connection can be reused and mark bolts if necessary [⇒ page 101](#) .



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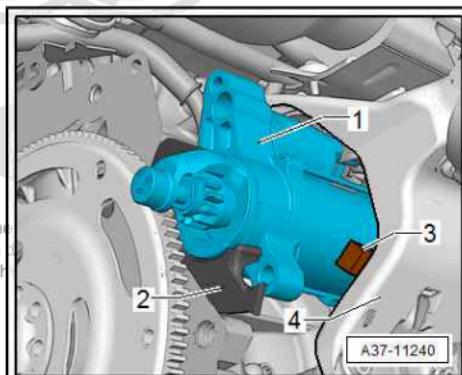
- Coat end seal -1- with lubricant before fitting.



- Bring starter -1- and end seal -2- into installation position. To do so, use plastic/rubber wedge -3- to position starter in installation position while supporting starter on engine support -4-.

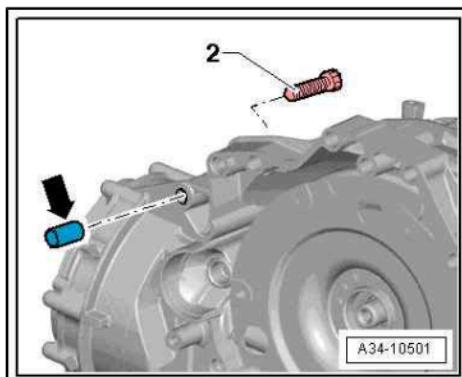


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 It is important to ensure that the end seal is in the correct installation position relative to the starter, as otherwise the securing bolts for the starter would be difficult to fit and the sealing function of the end seal would not be assured.



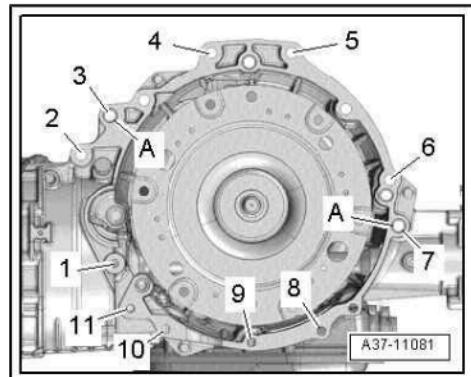
Vehicles with 4-cylinder engine:

- Insert top starter bolt -2- in gearbox.
- Fit spacer sleeve -arrow- onto bolt -2-.



Continued for all vehicles

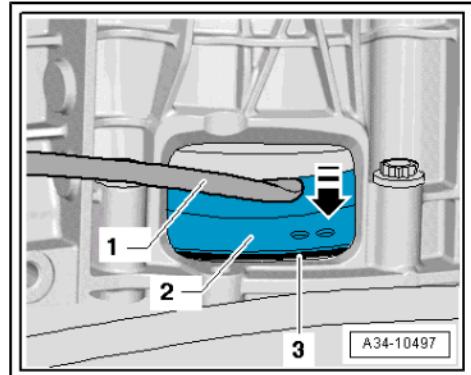
- Check that dowel sleeves -A- for centralising engine/gearbox are in the cylinder block; install any missing dowel sleeves.
- Vehicles with 3.0 ltr. TFSI engine: Join gearbox with engine and tighten bolts -6 ... 11-.
- Vehicles with 3.0 ltr. TDI biturbo engine: Join gearbox with engine and tighten bolts -3, 6 ... 11-.
- Tighten starter using bolts -1- and -2-, making sure that end seal is in correct position.
- Remove transportation lock - T40170- .
- Raise gearbox and tighten bolts for tunnel cross member [⇒ page 102](#) .
- Slacken tensioning strap and move engine and gearbox jack - V.A.G 1383 A- with gearbox support - T40173- out from underneath gearbox.



 Note

The following step is necessary to ensure that the torque converter makes even and proper contact on the drive plate and does not cant.

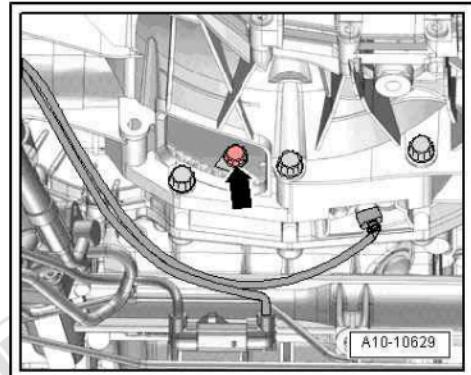
- Press torque converter -2- slightly against drive plate -3- in direction of -arrow- using lever -1-.
- Secure torque converter to drive plate as follows:



 Note

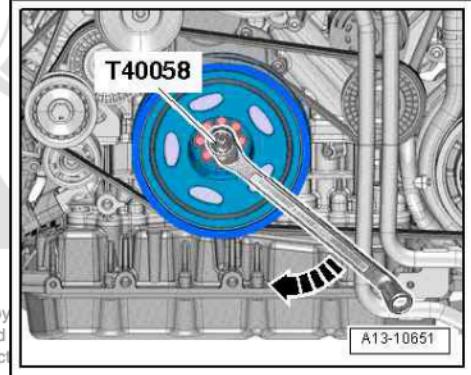
Use ring spanner insert, 16 mm - V.A.G 1332/14- to tighten bolts.

- Screw in first bolt -arrow- hand-tight (2 Nm).
- Turn crankshaft 180° in direction of engine rotation -arrow- with adapter - T40058- .



 Note

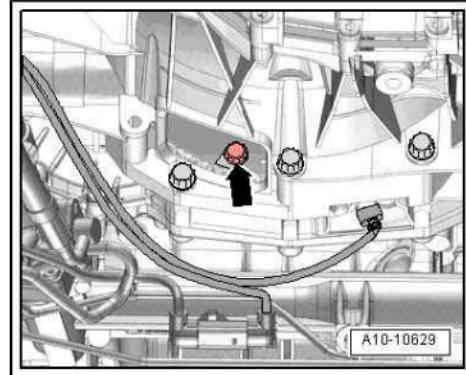
Illustration shows 3.0 ltr. TFSI engine.



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- Tighten bolt -arrow- accessible in this crankshaft position to 60 Nm.
- Turn crankshaft 60° further each time and tighten remaining five bolts to 60 Nm.



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- Tighten remaining engine/gearbox securing bolts.

Remaining installation steps are carried out in reverse sequence; note the following:

- Install selector lever cable [⇒ page 37](#).
- Secure intermediate steering shaft to steering rack ⇒ Running gear, axles, steering; Rep. gr. 48 ; Steering column; Removing and installing intermediate steering shaft .
- Install drive shafts and heat shield for drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Exploded view - drive shaft .
- Install heat shield on subframe ⇒ General body repairs, exterior; Rep. gr. 66 ; Strips / trim panels / extensions; Exploded view - heat shield .
- Install ATF lines and ATF cooler [⇒ page 107](#)
- Install radiator with cowl ⇒ Rep. gr. 19 ; Radiator/radiator fans; Removing and installing radiator .
- Install exhaust system ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers .
- Install propshaft ⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft .
- Install coolant pipe on gearbox (right-side) ⇒ Rep. gr. 19 ; Coolant pipes; Removing and installing coolant pipes .
- Install covers for drive shafts and noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .
- Observe measures required after connecting battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

Audi RS 6:



WARNING

There is a risk of fire and/or damage if the engine cover panel is missing.

- ◆ *The engine cover panel MUST be fitted before the bonnet is closed.*
- ◆ *The engine must not be started and the vehicle must not be driven if the bonnet is closed and the engine cover panel is not fitted.*

Continued for all vehicles:

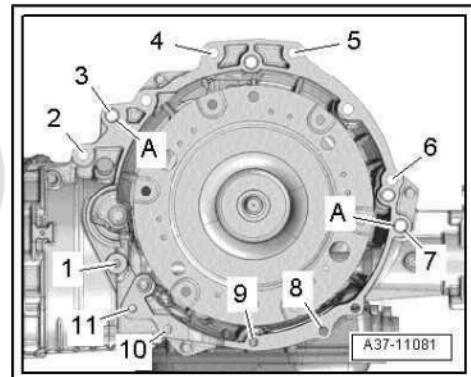


Caution

Overvoltage can cause irreparable damage to control units.

- ◆ *Do not use charger for boost starting.*

- Check selector lever cable and adjust if necessary [⇒ page 41](#) .
- Check ATF level and top up as required [⇒ page 115](#) .



2.3 Tightening torques for gearbox



Note

- ◆ *Tightening torques apply only to lightly greased, oiled, phosphated or black-finished nuts and bolts.*
- ◆ *Additional lubricant such as engine or gear oil may be used, but do not use graphite lubricant.*
- ◆ *Do not use parts which have been degreased.*
- ◆ *Tolerance for tightening torques is ± 15 %.*

Other tightening torques:

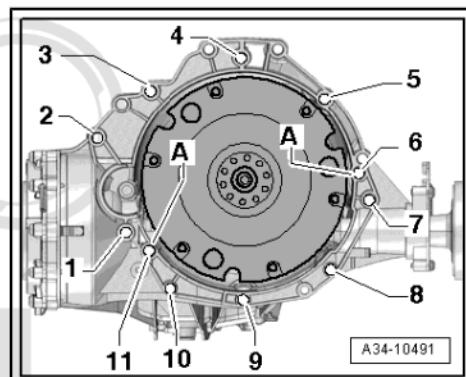
Component		Nm
Bolts and nuts		
	M6	9
	M7	15
	M8	20
	M10	40
	M12	65

Engine/gearbox attachment (2.0 ltr. TFSI engine)

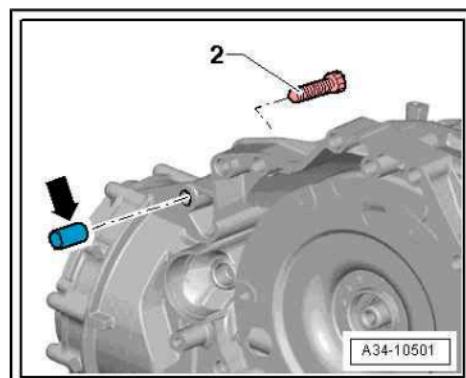
Item	Bolt	Nm
1	M10x50 ¹⁾	65
2 ²⁾ , 7	M12x100 ³⁾	30 + 90°
3 ⁴⁾ , 6	M12x75 ³⁾	30 + 90°
4, 5 ⁴⁾	M12x120 ³⁾	30 + 90°
8, 10	M10x75 ³⁾	15 + 90°
9	M10x60 ³⁾	15 + 90°
11	M12x50 ³⁾	30 + 90°
A	Dowel sleeves for centralising	

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- 1) Also secures starter. **The steel bolt can be re-used any number of times.**
- 2) Also secures starter. With spacer sleeve between starter and gearbox [⇒ page 100](#).
- 3) Aluminium bolts must not be used more than twice [⇒ page 101](#).
- 4) Also secures cable retainer.



- ◆ Bolt -2- also secures the starter to the gearbox and has an additional spacer sleeve -arrow-.
- ◆ The spacer sleeve must be fitted between the starter and the gearbox.

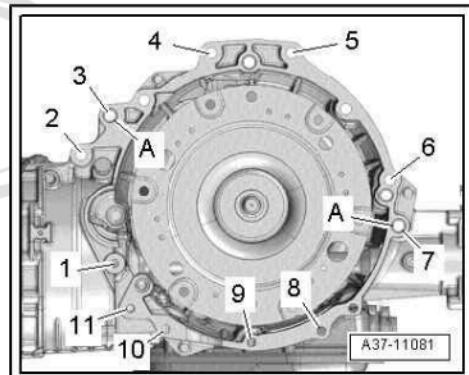


Engine/gearbox attachment (3.0 ltr. TFSI/3.0 ltr. TDI/biturbo engine)

Item	Bolt	Nm
1	M10x50 ¹⁾	65
2 ... 6	M12x100 ²⁾	30 + 90°
7	M12x125	30 + 90°
8, 11	M10x60 ²⁾	15 + 90°
9	M10x75 ²⁾	15 + 90°
10	M10x95 ²⁾	15 + 90°
A	Dowel sleeves for centralising	

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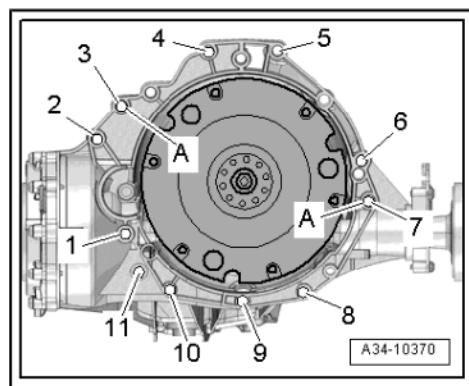
- 1) Secures starter to gearbox. **Property class 10.9**. The steel bolt can be re-used any number of times.
- 2) Aluminium bolts must not be used more than twice
⇒ [page 101](#) .



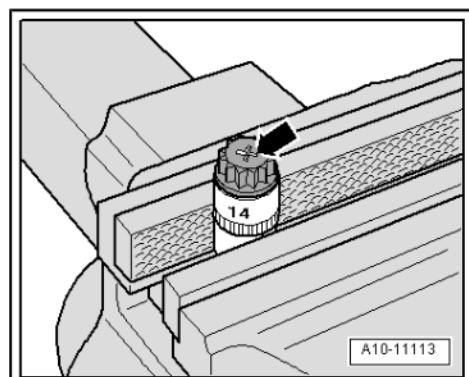
Engine/gearbox attachment (4.0 ltr. TFSI engine)

Item	Bolt	Nm
1	M10x50 ¹⁾	65
2 ... 6	M12x100 ²⁾	30 + 90°
7	M12x175 ³⁾	30 + 90°
8, 11	M10x60 ²⁾	15 + 90°
9	M10x75 ²⁾	15 + 90°
10	M10x95 ²⁾	15 + 90°
A	Dowel sleeves for centralising	

- 1) Property class 10.9. The steel bolt can be re-used any number of times.
- 2) Aluminium bolts must not be used more than twice
⇒ [page 101](#) .
- 3) Aluminium bolt must not be used more than twice
⇒ [page 101](#) . Nut with locking mechanism as counter bolted connection.



- ◆ Aluminium bolts must not be used more than twice. After they have been used once, an "X" -arrow- must therefore be chiselled onto the bolts.
- ◆ To prevent damage to the bolts, they must not be clamped in a vice when marking them. Clamp a 14 mm socket with $1\frac{1}{2}$ " drive in the vice instead, and insert the bolt into the socket, as shown in illustration.
- ◆ Bolts marked with an "X" must not be used again.



3 Assembly mountings

⇒ "3.1 Exploded view - assembly mountings", page 102

⇒ "3.2 Removing and installing tunnel cross member",
page 102

3.1 Exploded view - assembly mountings

1 - Bolt

- M10x55 (8.8): 40 Nm
- M10x40 (10.9): 70 Nm

2 - Tunnel cross member

- Removing and installing
⇒ [page 102](#)

3 - Stop

- For gearbox mounting

4 - Gearbox mounting

- Removing and installing
⇒ Rep. gr. 10 ; Assembly mountings; Removing and installing gearbox mounting

5 - Bolt

- 40 Nm

6 - Nut

- Only remove if gearbox mounting has to be detached from gearbox support
- 20 Nm

7 - Bolt

- 40 Nm

8 - Gearbox support

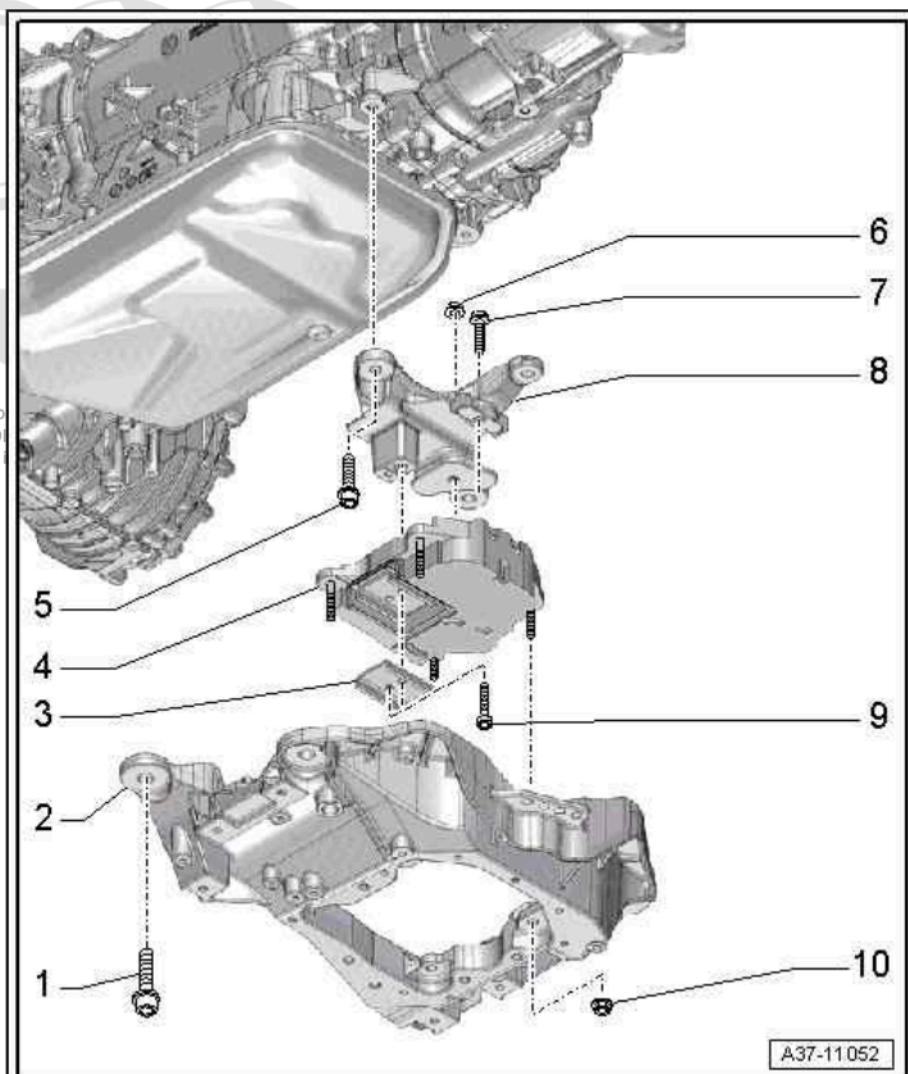
- Removing and installing
⇒ Rep. gr. 10 ; Assembly mountings; Removing and installing gearbox mounting

9 - Bolt

- Only remove if gearbox mounting has to be detached from gearbox support
- Renew
- 20 Nm +90°

10 - Nut

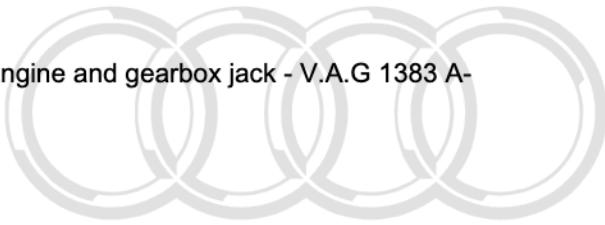
- 20 Nm



3.2 Removing and installing tunnel cross member

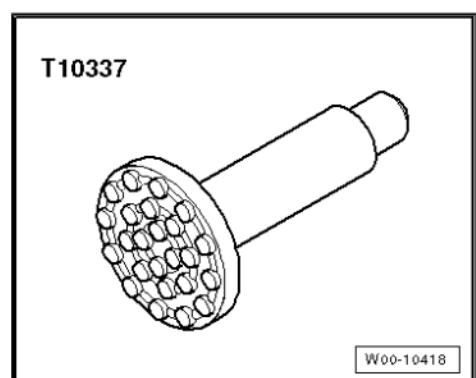
Special tools and workshop equipment required

- ◆ Engine and gearbox jack - V.A.G 1383 A-



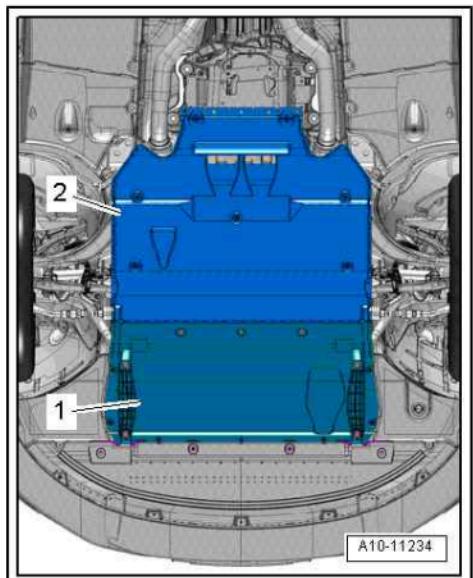
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- ◆ Gearbox support - T10337-



Removing

- Remove rear noise insulation -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



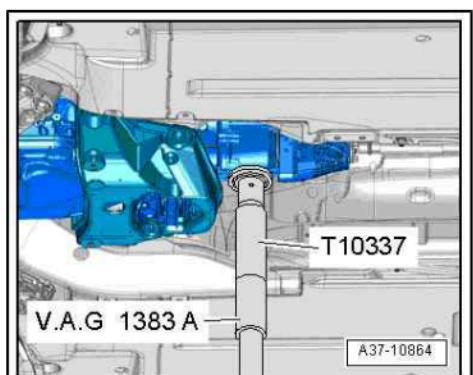
- Set up gearbox support - T10337- on engine and gearbox jack - V.A.G 1383 A- and position underneath gearbox.
- Raise gearbox slightly.



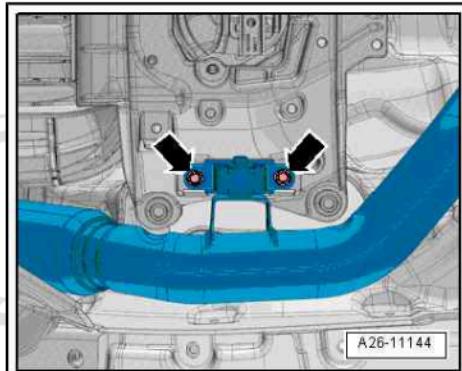
WARNING

Risk of accident.

- ◆ *Engine and gearbox jack - V.A.G 1383 A- must remain in position when work is being carried out and must not be left unattended under the vehicle.*



- Vehicles with 2.0 ltr. TFSI engine: Remove bolts -arrows- for front silencer.



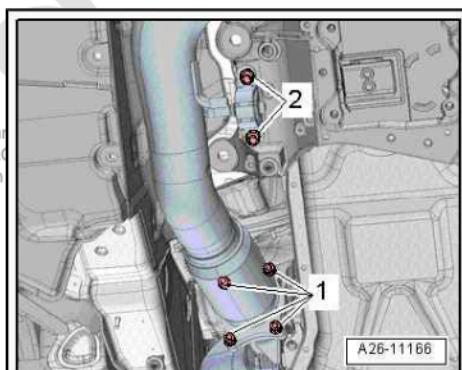
- Vehicles with 3.0 ltr. TDI biturbo engine: Remove bolts -2-.



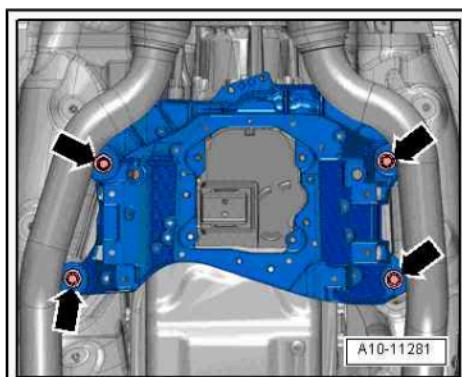
Note

Disregard -item 1-.

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- Remove bolts -arrows- for tunnel cross member.



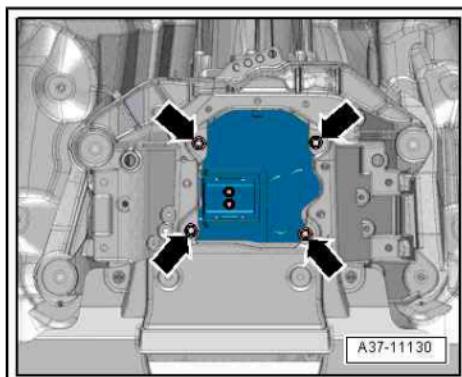
- Unscrew nuts -arrows- and remove tunnel cross member.

Installing

Installation is carried out in reverse sequence; note the following:

Tightening torques

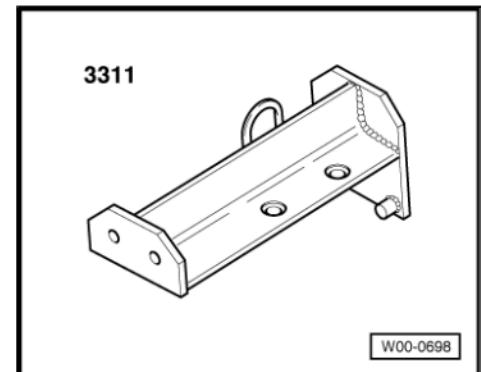
- ◆ [⇒ "3.1 Exploded view - assembly mountings", page 102](#)
- ◆ [⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers](#)
- ◆ [⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation](#)



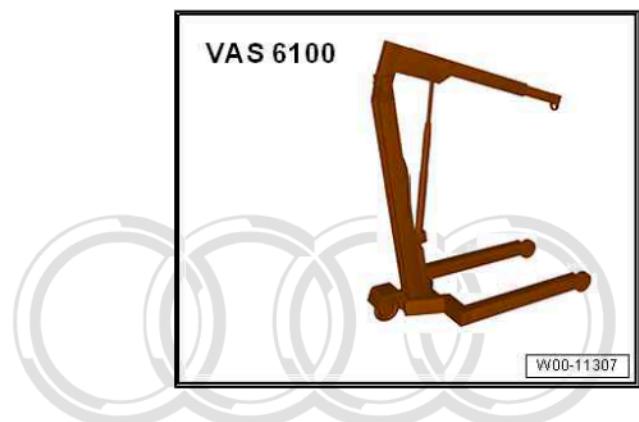
4 Transporting gearbox

Special tools and workshop equipment required

- ◆ Hook and support tool - 3311- with bolt -3311/1-



- ◆ Workshop hoist - VAS 6100-



Procedure

- Gearbox removed



Caution

Risk of damage to gearbox components if gearbox is not supported correctly when removed.

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- ◆ The gearbox must not be placed down on the ATF cooler or ATF oil pan.

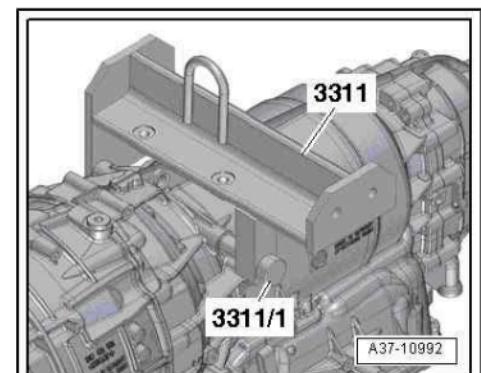


WARNING

Risk of accident if gearbox is not secured sufficiently.

- ◆ Replace bolt of hook and support tool - 3311- with new, longer bolt -3311/1- .
- ◆ Otherwise the gearbox is not secured properly.

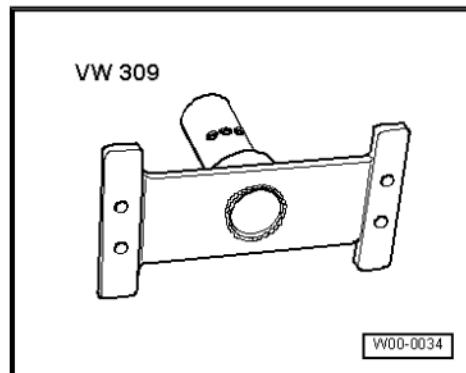
- Secure gearbox to hook and support tool - 3311- (using new, longer bolt -3311/1-).
- The workshop hoist - VAS 6100- can be used to lift and move the gearbox.



5 Securing to engine and gearbox support

Special tools and workshop equipment required

- ◆ Retaining plate - VW 309-



- ◆ Engine and gearbox support - VAS 6095-



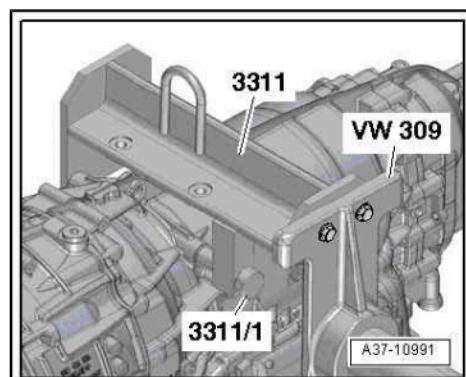
Procedure

- Gearbox is on workshop hoist - VAS 6100- [⇒ page 105](#) .
- Secure support plate - VW 309- to hook and support tool - 3311- .
- Using workshop hoist - VAS 6100- , insert gearbox into engine and gearbox support - VAS 6095- .



Note

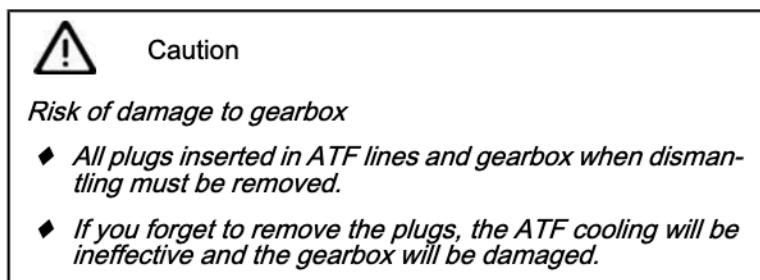
If the filled gearbox with ATF oil pan is to be turned upside-down on the engine and gearbox support, the breathers for the gearbox housing and final drive must be sealed.



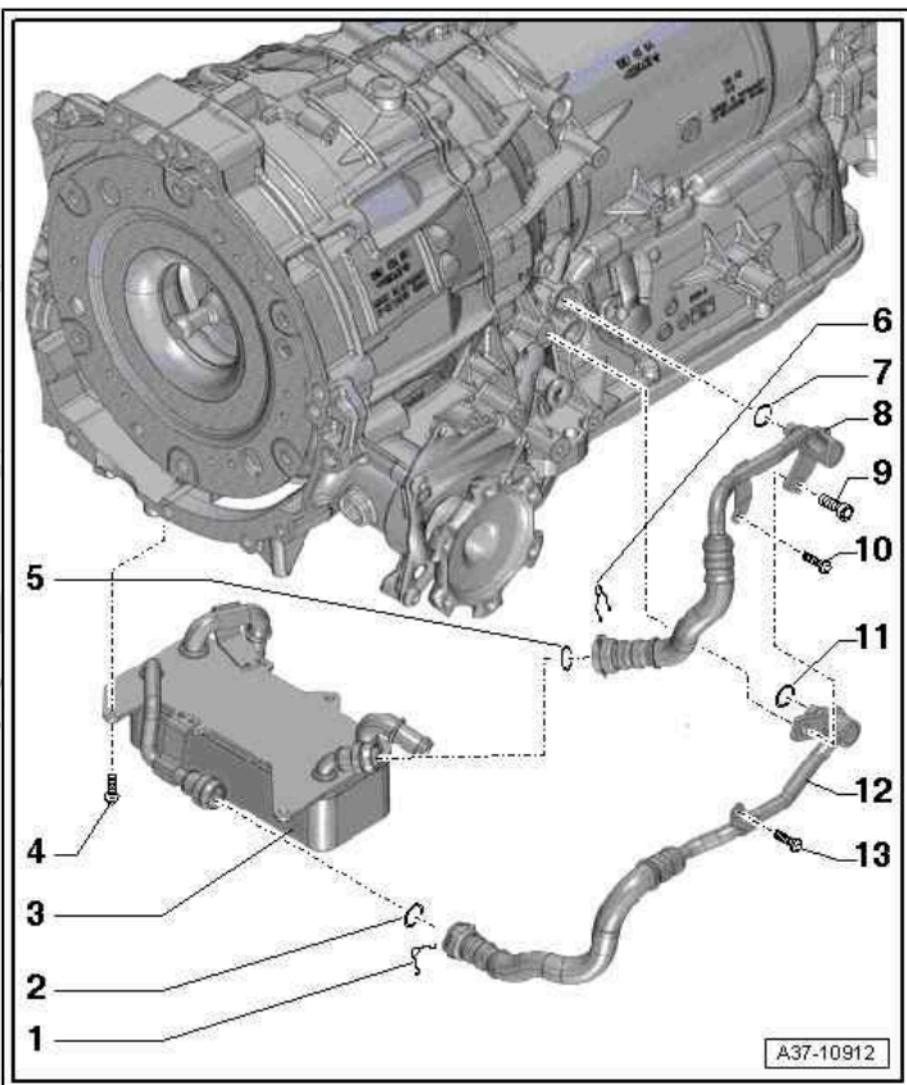
6 ATF circuit

- ⇒ "6.1 Exploded view - ATF circuit", page 107
- ⇒ "6.2 Removing and installing ATF cooler", page 108
- ⇒ "1.2 Removing and installing ATF strainer", page 125
- ⇒ "6.3 Removing and installing ATF lines", page 111

6.1 Exploded view - ATF circuit



- 1 - Retaining clip
- 2 - O-ring
 - Renew
 - Lightly lubricate with ATF before inserting
- 3 - ATF cooler
 - Removing and installing
⇒ page 108
- 4 - Bolt
 - 8 Nm
- 5 - O-ring
 - Renew
 - Lightly lubricate with ATF before inserting
- 6 - Retaining clip
- 7 - O-ring
 - Renew
 - Lightly lubricate with ATF before inserting
- 8 - ATF line
 - Cleaning ⇒ page 114
 - Push in by hand with new O-rings as far as stop
- 9 - Bolt
 - First push in ATF lines with new O-rings by hand as far as stop
 - Retaining tab on bottom ATF line should rest on thread of gearbox
 - Retaining tab on top ATF line should rest on retaining tab on bottom ATF line
 - 20 Nm



10 - Bolt

- 8 Nm

11 - O-ring

- Renew
- Lightly lubricate with ATF before inserting

12 - ATF line

- Cleaning [⇒ page 114](#)
- Push in by hand with new O-rings as far as stop

13 - Bolt

- 8 Nm

Measure length of breather pipe on adapter for oil filling - VAS 6262 A- and shorten if necessary.

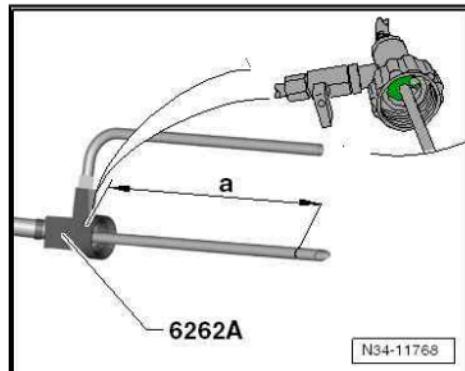
To ensure that breather pipe of adapter for oil filling -VAS 6262 A- does not make contact with bottom of oil container, breather pipe must be shortened to dimension -a-.

- Dimension -a- = 210 mm

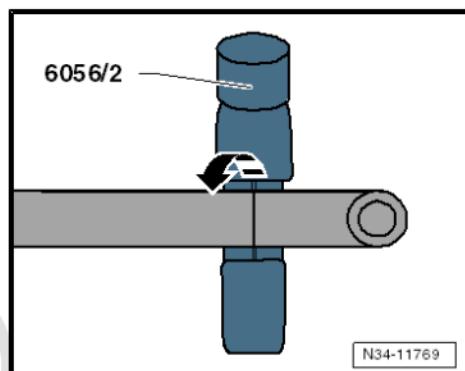


Note

Dimension -a- is measured from stem (green area in magnified view) of adapter for oil filling -VAS 6262 A- .



- Mark length on breather pipe and shorten breather pipe using pipe cutter -6056/2- .
- Clean adapter for oil filling - VAS 6262 A- .



6.2 Removing and installing ATF cooler

Special tools and workshop equipment required

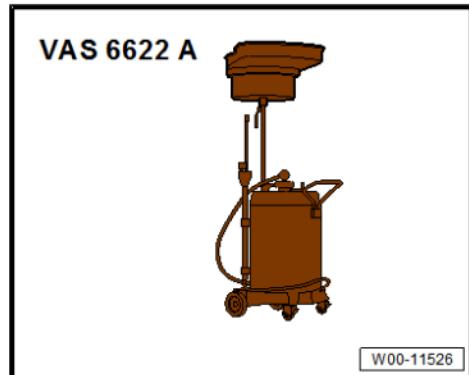
- ◆ Hose clamps, up to 25 mm - 3094-



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- ◆ Used oil collection and extraction unit - VAS 6622A-



Removing

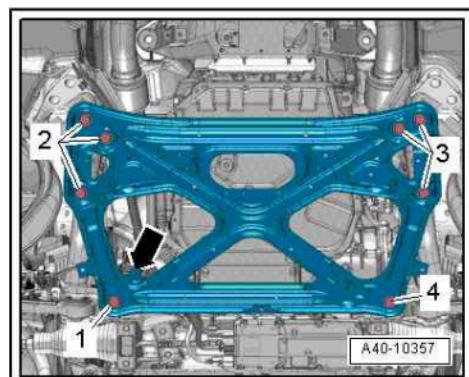
- Remove subframe cross brace ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Removing and installing subframe cross brace .



Caution

Risk of damage to parts of the running gear.

- ◆ *Do not let the vehicle down on the wheels if the gearbox mounting, steering rack or subframe cross brace are not properly installed.*



- Place used oil collection and extraction unit - VAS 6622A- below gearbox.

Vehicles up to model year 2014

- Pull off retaining clips -1- and -4- and disconnect ATF lines.
- Clamp off coolant hoses using hose clamps up to 25 mm - 3094- and disconnect hoses (release hose clips -2- and -3-).
- Remove bolts -arrows- and detach ATF cooler.

Installing

Installation is carried out in reverse sequence; note the following:

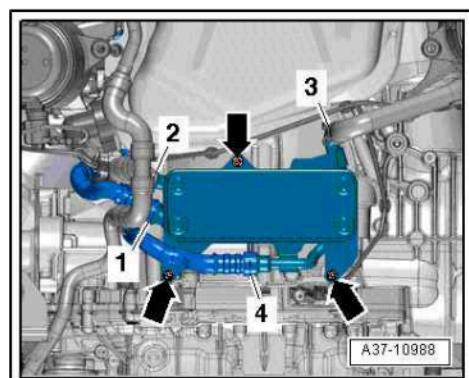
- Push on ATF lines as far as stop and fit retaining clips -1- and -4-.
- Loosen, but do not remove, all three bolts -arrows- on ATF lines.



Caution

Risk of damage to ATF cooler if ATF lines are tensioned.

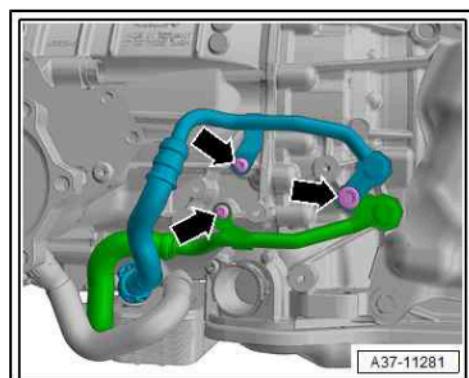
- ◆ *Release tension at ATF lines by loosening securing bolts.*



- Tighten bolts -arrows- to specified torque again.

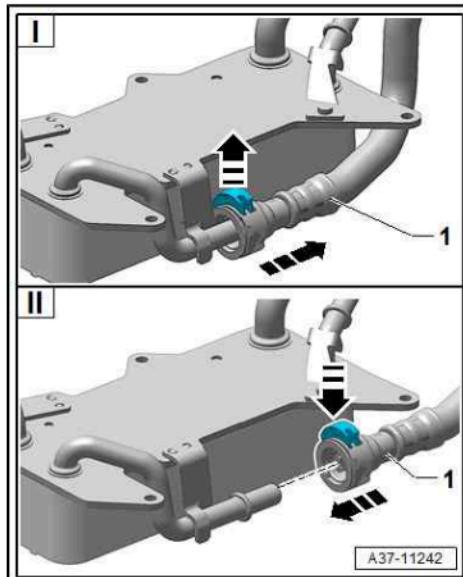
Tightening torques

- ◆ [⇒ “6.1 Exploded view - ATF circuit”, page 107](#)
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- ◆ **Cross brace ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Exploded view - subframe**

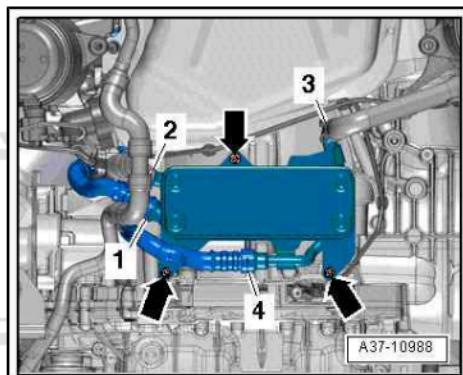


Vehicles from model year 2014 onwards

- Press ATF line -1- all the way onto ATF connection until retainers are disengaged, and release retaining clip.
- Detach ATF line.



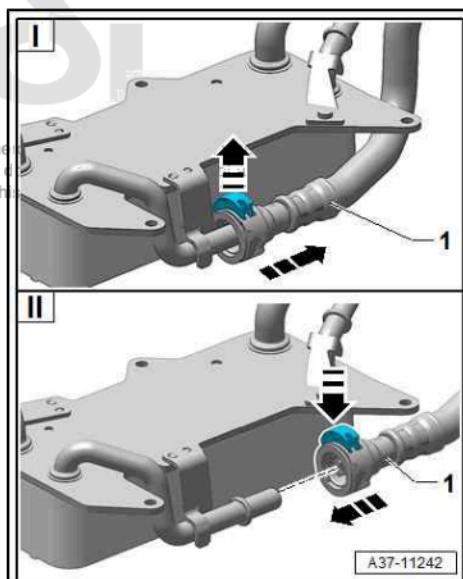
- Clamp off coolant hoses using hose clamps up to 25 mm - 3094- and disconnect hoses (release hose clips -2- and -3-).
- Remove bolts -arrows- and detach ATF cooler.



Installing

Installation is carried out in reverse sequence; note the following:

- Lightly lubricate ATF connection with ATF.
- Press ATF line -1- all the way onto ATF connection until retainers are disengaged.
- Holding in this position, press down retaining clip of quick-release coupling.



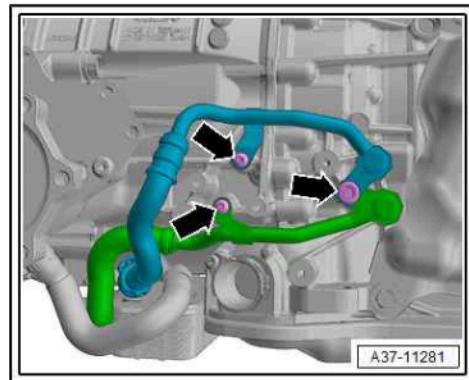
- Loosen all three bolts -arrows-, but do not remove.



Caution

Risk of damage to ATF cooler if ATF lines are tensioned.

◆ *Release tension at ATF lines by loosening securing bolts.*



- Tighten bolts -arrows- to specified torque again.
- Check ATF level [⇒ page 115](#) .

Tightening torques

- ◆ [⇒ "6.1 Exploded view - ATF circuit", page 107](#)
- ◆ Cross brace ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Exploded view - subframe

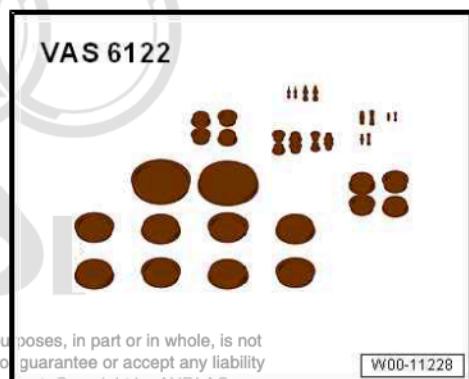
6.3 Removing and installing ATF lines

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - VAS 6622A-



- ◆ Engine bung set - VAS 6122-



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- ◆ Hose, approx. 18 mm dia.
- ◆ Compressed-air gun (commercially available)
- ◆ Safety goggles

Removing

Note

- ◆ Refer to general repair instructions [⇒ page 6](#).
- ◆ Note rules for cleanliness when working on automatic gearbox [⇒ page 5](#).
- ◆ Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .
- ◆ Check ATF level after renewing ATF lines [⇒ page 115](#).



Caution

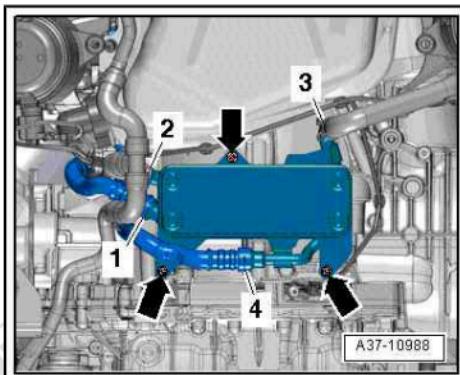
Risk of damage to gearbox

- ◆ All plugs inserted in ATF lines and gearbox when dismantling must be removed.
- ◆ If you forget to remove the plugs, the ATF cooling will be ineffective and the gearbox will be damaged.

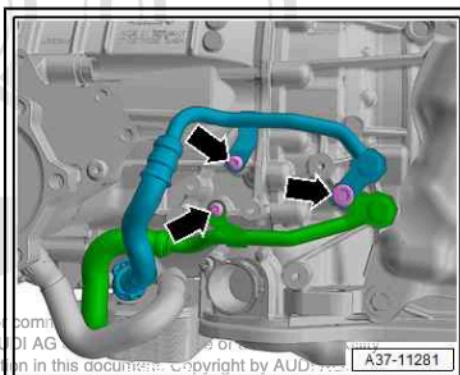
- Place used oil collection and extraction unit - VAS 6622- below gearbox.

Vehicles up to model year 2014

- Pull off retaining clips -1- and -4- and disconnect ATF lines.



- Remove bolts -arrows- and detach ATF lines.
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .



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Installing

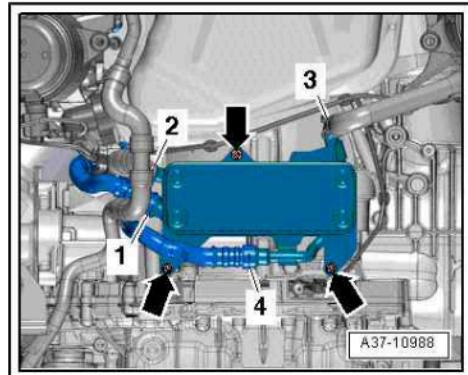
Installation is carried out in reverse sequence; note the following:



Caution

Risk of damage to gearbox

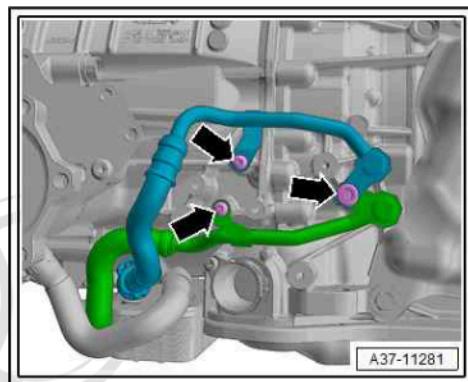
- ◆ *All plugs inserted in ATF lines and gearbox when dismantling must be removed.*
- ◆ *If you forget to remove the plugs, the ATF cooling will be ineffective and the gearbox will be damaged.*



- Push on ATF lines as far as stop and fit retaining clips -1- and -4-.
- Tighten bolts -arrows- to specified torque again.

Tightening torques

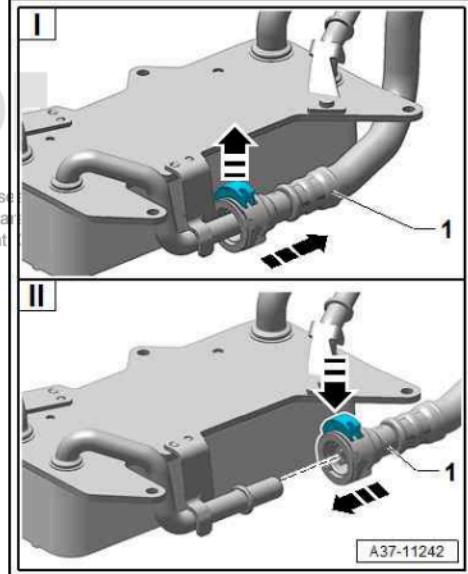
- ◆ [⇒ "6.1 Exploded view - ATF circuit", page 107](#)
- Check ATF level [⇒ page 115](#) .



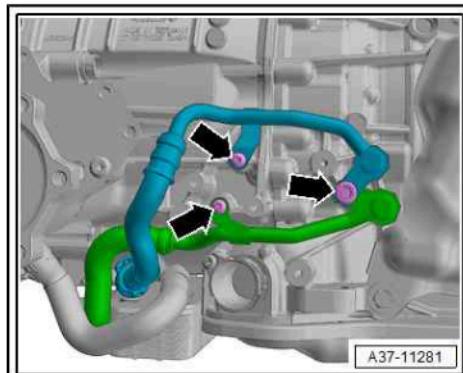
Vehicles from model year 2014 onwards

- Press ATF line -1- all the way onto ATF connection until retainers are disengaged, and release retaining clip.
- Detach ATF lines.

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- Remove bolts -arrows- and detach ATF lines.
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .



Installing

Installation is carried out in reverse sequence; note the following:



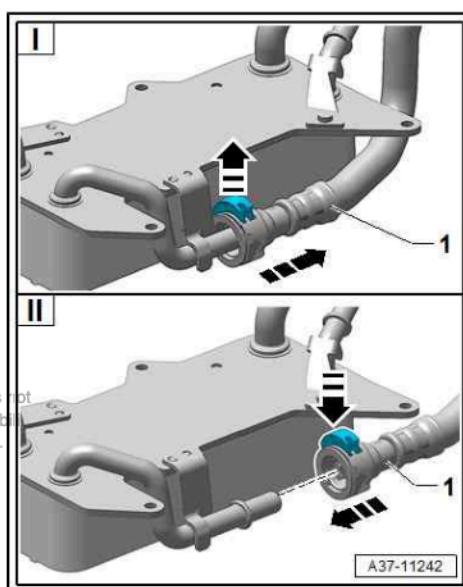
Caution

Risk of damage to gearbox

- ◆ All plugs inserted in ATF lines and gearbox when dismantling must be removed.
- ◆ If you forget to remove the plugs, the ATF cooling will be ineffective and the gearbox will be damaged.

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- Lightly lubricate ATF connection with ATF.
- Press ATF line -1- all the way onto ATF connection until retainers are disengaged.
- Holding in this position, press down retaining clip of quick-release coupling.
- Tighten bolts -arrows- to specified torque again.



Tightening torques

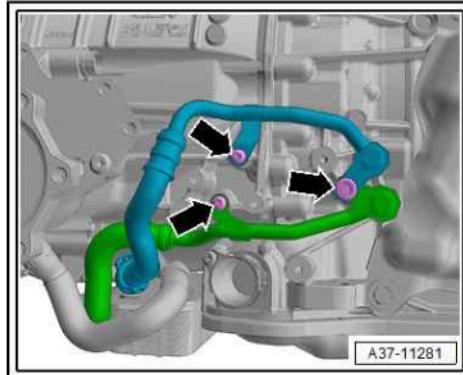
- ◆ [⇒ "6.1 Exploded view - ATF circuit", page 107](#)
- Check ATF level [⇒ page 115](#) .

Cleaning



Note

*Note rules for cleanliness when working on automatic gearbox
⇒ page 5.*



- Before fitting a replacement gearbox, always blow through the ATF cooler and ATF lines with compressed air (not more than 10 bar).
- Place used oil collection and extraction unit - VAS 6622A- below gearbox.



Note

If the ATF which emerges during cleaning is very dirty, the ATF cooler and ATF lines must additionally be flushed out with clean ATF.

7 ATF

- ⇒ "7.1 Checking ATF level", page 115
- ⇒ "7.2 Draining and filling ATF", page 118

7.1 Checking ATF level

Special tools and workshop equipment required

- ◆ Vehicle diagnostic tester
- ◆ Used oil collection and extraction unit - VAS 6622A-



- ◆ 1 litre ATF container (genuine replacement part) ⇒ Electronic parts catalogue
- ◆ Safety goggles
- ◆ Protective gloves (acid resistant)

Test conditions

- Gearbox must not be in emergency running (backup) mode.
- Vehicle must be absolutely horizontal (drive it onto a four-pillar lifting platform or over an inspection pit).
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- Gearbox is in position "P".
- Parking brake button must be pulled up to apply the electro-mechanical parking brake.
- Extractor hose(s) of an exhaust gas extractor (switched on) must be connected.
- Air conditioner and heating switched off.
- Vehicle diagnostic tester is connected.
- The ATF temperature should not be higher than 30° C - 35° C at the beginning of the test (the temperature will rise during the test). This is because the oil level measurement value is only correct if measured between 35°C and 45°C (maximum 50°C in hot climates).



Caution

Risk of damage to gearbox

- ◆ *Use only the ATF supplied as a replacement part for automatic gearbox 0BK. For allocation see ⇒ Electronic parts catalogue .*
- ◆ *Other types of oil cause malfunctions and/or failure of the gearbox.*
- ◆ *The adapter for filling ATF oil must be clean and the ATF must not be mixed with other types of ATF!*
- ◆ *The engine must not be started if only a little or no ATF remains in gearbox after repair work or after excessive ATF leakage.*

Procedure

- Using the diagnostic tester in Guided Fault Finding mode, go to **Function/Component Selection** and select the following menu items:
 - ◆ **Drive system**
 - ◆ **OBL gearbox**
 - ◆ **01 - Self-diagnosis compatible systems**
 - ◆ **02 - Gearbox electronics**
 - ◆ **02 - Gearbox electronics, Functions**
 - ◆ **02 - Measured values**
- Select the value for **Gearbox oil temperature** (ATF) from the menu.
- Read off ATF temperature.



Audi

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Checking ATF level

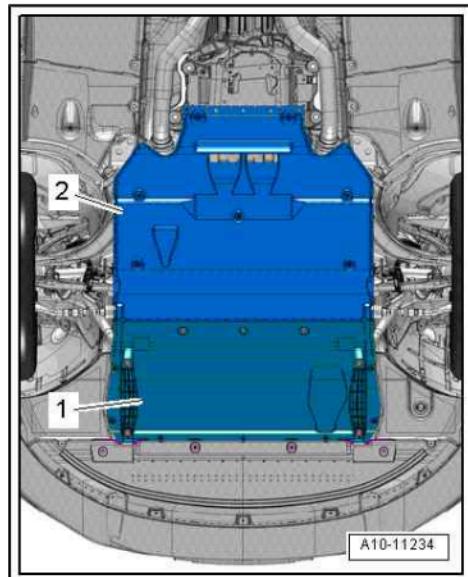
- Remove rear noise insulation -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .
- Start engine with selector lever in position "P".



Note

Only start the engine when all the necessary items have been prepared. The ATF temperature increases very quickly; this may make it impossible to perform the ATF level check.

- With brake pedal still depressed, select all gear positions ("P", "R", "N", "D/S") one after the other at idling speed, maintaining each position for at least 10 seconds.
- Shift gearbox into "P".
- Allow engine to continue running at idling speed.
- Place used oil collection and extraction unit - VAS 6622A- below gearbox.



WARNING

Risk of eye injury.

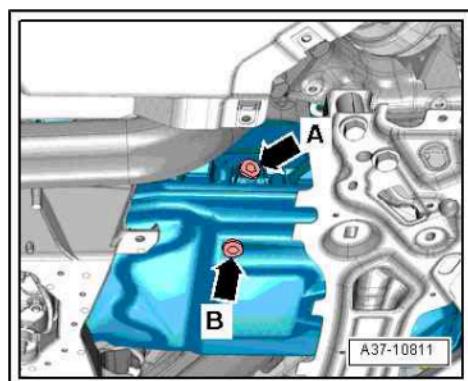
- ◆ *Put on safety goggles.*

- When an ATF temperature of 35 °C is reached, unscrew plug for ATF inspection and filler hole -arrow A- and drain off any surplus ATF.
- The ATF level is OK if a small amount of fluid comes out at the ATF inspection and filler hole -arrow A- when the ATF temperature is between 35 °C and 45 °C (maximum 50 °C in hot climates) (the fluid level rises due to expansion as it warms up).
- If no ATF comes out, fill up with ATF. [⇒ page 118](#)



Note

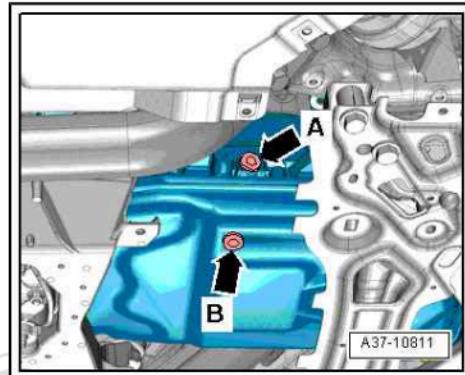
- ◆ *You should add some ATF at a temperature of about 40 °C; doing so will decrease the likelihood that the check will have to be performed again because the ATF level is too low (this would mean cooling the gearbox to the test temperature).*
- ◆ *The ATF inspection and filler hole must be sealed again before the ATF temperature reaches 45 °C (or a maximum of 50 °C in hot climates).*
- ◆ *Renew plug for ATF inspection and filler hole.*
- ◆ *If ATF level is checked when ATF temperature is too low, this will lead to overfilling.*
- ◆ *If ATF level is checked when ATF temperature is too high, this will lead to underfilling.*
- ◆ *Both overfilling and underfilling will impair the function of the gearbox.*



- Tighten new plug for ATF inspection and filler hole. The ATF level check is now completed.

Tightening torques

- ◆ [⇒ "2.1 Overview of fitting locations - drain and inspection plugs", page 132](#)
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation



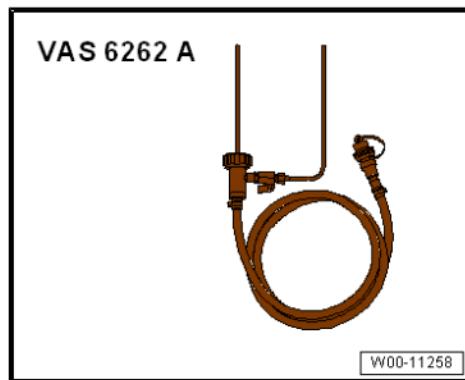
7.2 Draining and filling ATF

Special tools and workshop equipment required

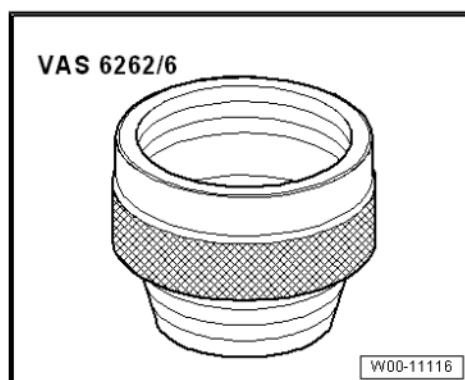
- ◆ Used oil collection and extraction unit - VAS 6622A-



- ◆ Adapter for oil filling - VAS 6262 A-



- ◆ Adapter for filling ATF oil - VAS 6262/5-
- ◆ If necessary, adapter - VAS 6262/6-



- ◆ 1 litre ATF container (genuine replacement part); for part number refer to ⇒ Electronic parts catalogue .

- ◆ Safety goggles
- ◆ Protective gloves (acid resistant)

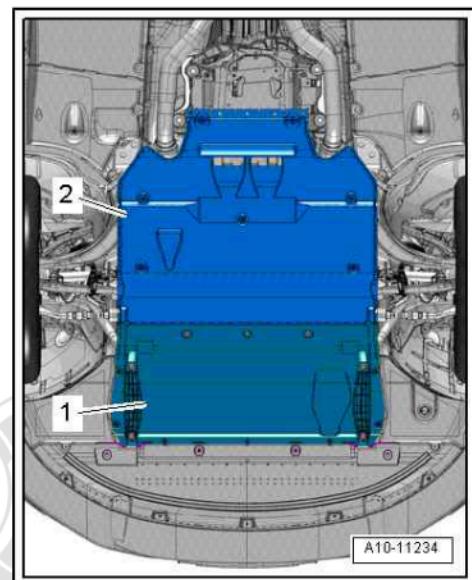
Draining



Note

When draining the ATF the gearbox should be warm (operating temperature). However, the engine must not be started when there is no ATF in the gearbox or if the level is too low.

- Engine not running.
- Vehicle must be absolutely horizontal (on a four-pillar lifting platform or over an inspection pit).
- Gearbox is in position "P".
- Parking brake button must be pulled up to apply the electro-mechanical parking brake.
- Remove rear noise insulation -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



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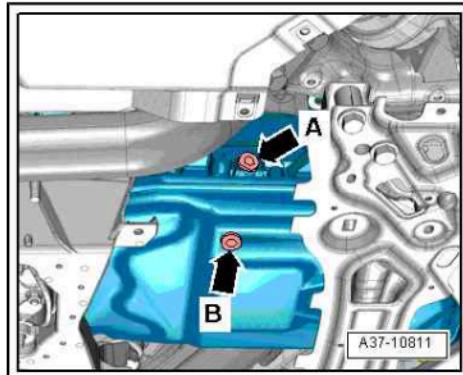
- Place used oil collection and extraction unit - VAS 6622A- below gearbox.



WARNING

Risk of eye injury.

- ◆ Put on safety goggles.



- Remove ATF drain plug -arrow B- and allow ATF to drain off.



Note

- ◆ Always adhere to waste disposal regulations.
- ◆ Renew ATF drain plug with seal.
- ◆ Renew plug for ATF inspection and filler hole.

- Tighten new drain plug -arrow B-.



Caution

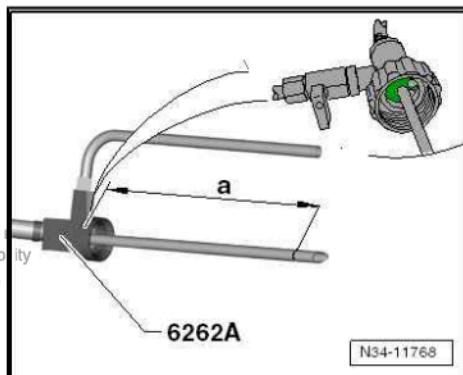
Risk of damage to gearbox

- ◆ Only the ATF available as a replacement part may be used for the automatic gearbox 0BL.
- ◆ For correct version, refer to ⇒ Electronic parts catalogue
- ◆ Other types of oil cause malfunctions and/or failure of the gearbox.
- ◆ The adapter for filling ATF oil must be clean and the ATF must not be mixed with other types of ATF!
- ◆ The engine must not be started if only a little or no ATF remains in gearbox after repair work or after excessive ATF leakage.

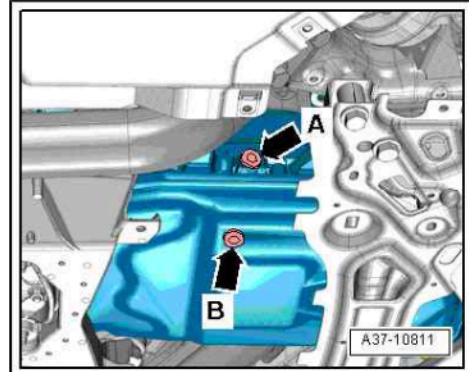
Filling up ATF

- Measure length of breather pipe on adapter for oil filling - VAS 6262 A- and shorten if necessary [⇒ page 108](#).
- Secure ATF container with adapter for oil filling - VAS 6262 A- as high as possible on vehicle.

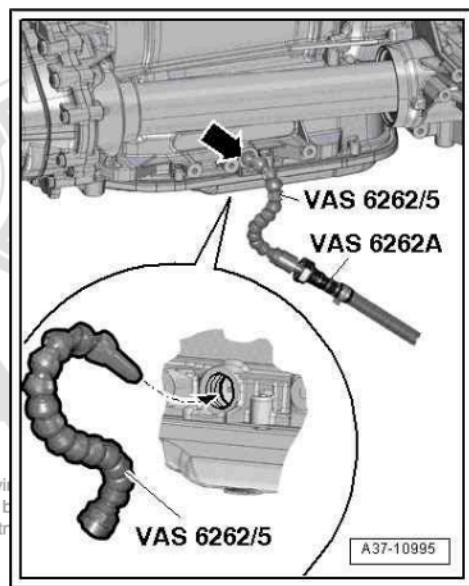
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- Unscrew plug for ATF inspection and filler hole -arrow A-.



- Insert adapter for filling ATF oil - VAS 6262/5- into ATF inspection and filler hole -arrow-.
- Fill up with ATF via adapter until ATF comes out of inspection and filler hole.
- Shift gearbox into "P".
- Start engine and turn off after 20 seconds.
- Continue filling with ATF using adapter until ATF comes out of inspection hole.
- Start engine.
- Continue filling with ATF via adapter until ATF comes out of inspection and filler hole again.
- Tighten old plug for ATF inspection and filler hole.
- With brake pedal depressed, select all gear positions ("P", "R", "N", "D/S") one after the other at idling speed, maintaining each position for at least 3 seconds.
- Shift gearbox into "P".
- Check ATF level [page 115](#) .



Observe all notes and test requirements which are listed under "Checking ATF level".

Tightening torques

- ◆ [⇒ "2.1 Overview of fitting locations - drain and inspection plugs", page 132](#)
- ◆ [⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation](#)

38 – Gears, control

1 ATF system

⇒ “1.1 Removing and installing oil pan”, page 122

For all further ATF system procedures, refer to ⇒ Servicing 8-speed automatic gearbox; Rep. gr. 38 ; ATF system .

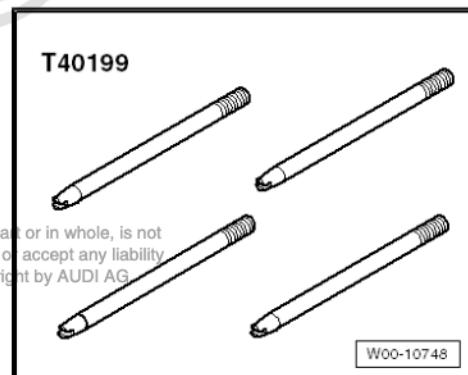
1.1 Removing and installing oil pan

Special tools and workshop equipment required

- ◆ Guide pin - T40199-



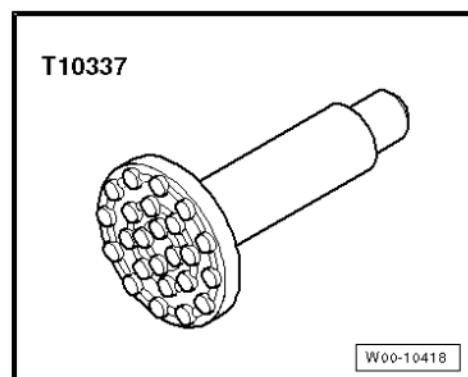
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- ◆ Engine and gearbox jack - V.A.G 1383 A-



- ◆ Gearbox support - T10337-



Removing



Note

- ◆ Refer to general repair instructions [⇒ page 6](#).
- ◆ Note rules for cleanliness when working on automatic gearbox [⇒ page 5](#).

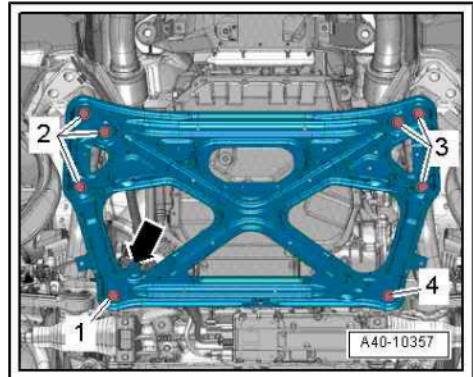
- Remove subframe cross brace ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Removing and installing subframe cross brace .



Caution

Risk of damage to parts of the running gear.

- ◆ Do not let the vehicle down on the wheels if the gearbox mounting, steering rack or subframe cross brace are not properly installed.



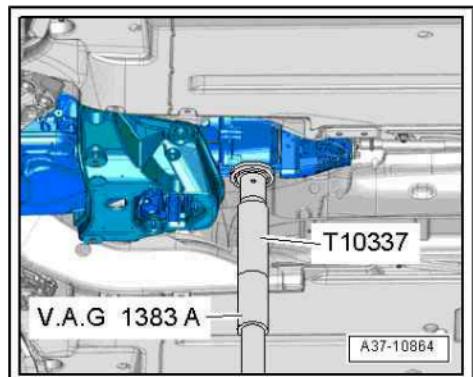
- Set up gearbox support - T10337- on engine and gearbox jack - V.A.G 1383 A- and position underneath gearbox.
- Raise gearbox slightly.



WARNING

Risk of accident.

- ◆ Engine and gearbox jack - V.A.G 1383 A- must remain in position when work is being carried out and must not be left unattended under the vehicle.



- Remove gearbox support with gearbox mounting ⇒ Rep. gr. 10 ; Assembly mountings; Removing and installing gearbox mounting .
- Drain ATF [⇒ page 118](#). Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.
- Remove bolts for ATF oil pan in the sequence -12 ... 1-.
- Remove ATF oil pan.

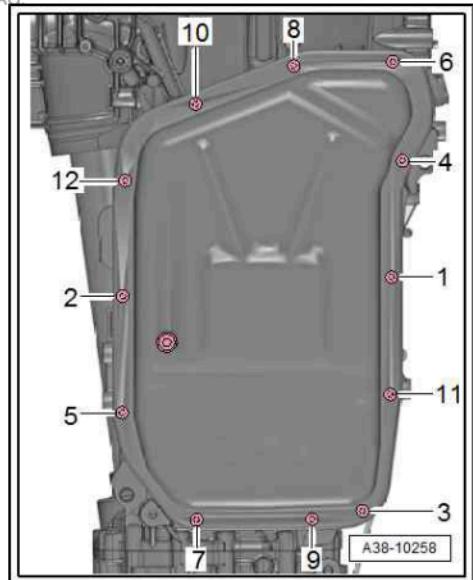
Installing

Installation is carried out in reverse sequence; note the following:

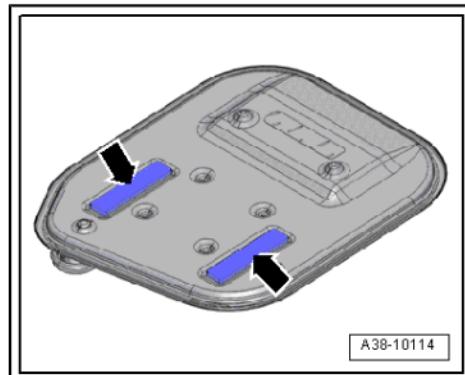


Note

- ◆ Renew gasket and bolts for ATF oil pan.
- ◆ On high-mileage vehicles, it is recommended to renew the ATF filter if the ATF oil pan is removed [⇒ page 125](#). Otherwise the ATF filter only has to be renewed if it has been damaged.



- Clean both magnets -arrows-. Ensure that magnets make full contact with recesses in ATF filter.
- Clean sealing surface thoroughly; remaining material from the previous gasket must be removed completely.

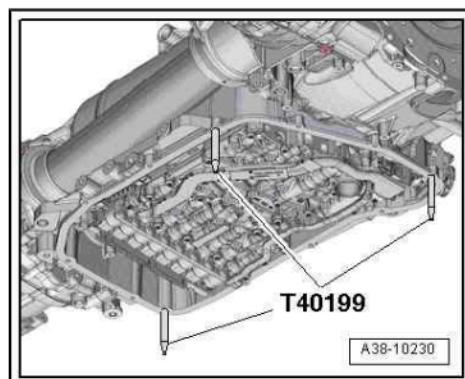
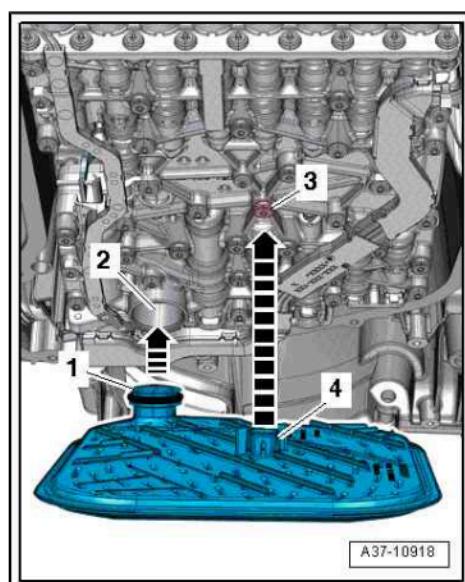


- Make sure that the ATF filter is fitted correctly on the mechatronic unit, otherwise the ATF oil pan cannot be seated properly on the entire surface.
- ◆ The intake neck -1- of the ATF filter must be inserted as far as the stop in aperture -2- of the mechatronic unit.
- ◆ The retainer -4- on the reverse side must engage on the bolt -3- located opposite on the mechatronic unit.



- Screw in the three guide pins - T40199- hand-tight, as shown in illustration.

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- Fit ATF oil pan with new gasket over guide pins T40199 and onto gearbox.



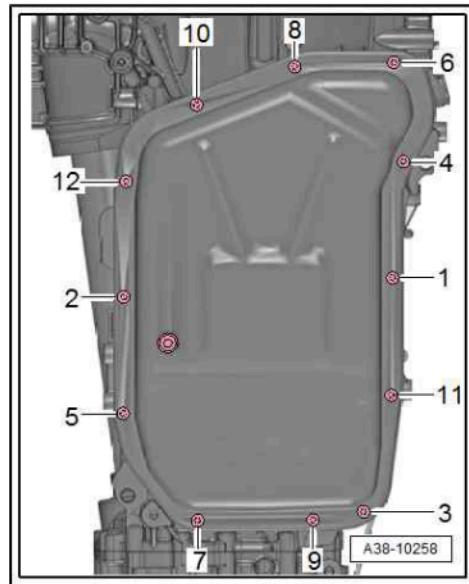
- Screw in bolts -1 and 2- by hand until bolt heads make contact.
- Remove guide pins - T40199- , fit bolts and tighten bolts in specified sequence.
- Tighten bolts in 3 stages in the sequence shown:

Stage	Bolts	Tightening torque/angle specification
1.	-1 ... 12-	Screw in new bolts by hand until bolt heads make contact
2.	-1 ... 12-	4 Nm
3.	-1 ... 12-	Turn 45° further

- Fill up with ATF [⇒ page 118](#) .

Tightening torques

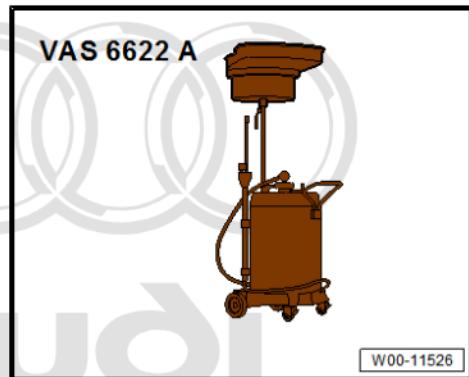
- ◆ Gearbox support with gearbox mountings ⇒ Rep. gr. 10 ; Assembly mountings; Exploded view - assembly mountings
- ◆ Cross brace ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Exploded view - subframe



1.2 Removing and installing ATF strainer

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - VAS 6622A-



Removing



- ◆ *Refer to general repair instructions [⇒ page 6](#) .*
- ◆ *Note rules for cleanliness when working on automatic gearbox [⇒ page 5](#) .*

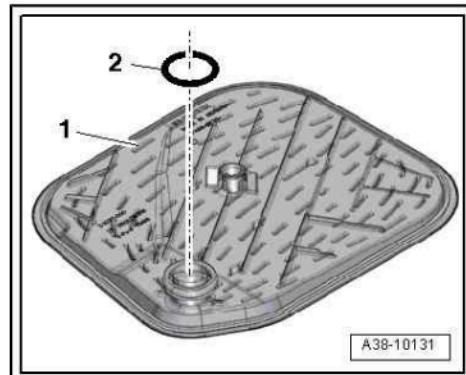
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- Remove ATF oil pan [⇒ page 122](#) .
- Place used oil collection and extraction unit - VAS 6622A- below gearbox.
- Carefully pull ATF filter downwards off mechatronic unit.

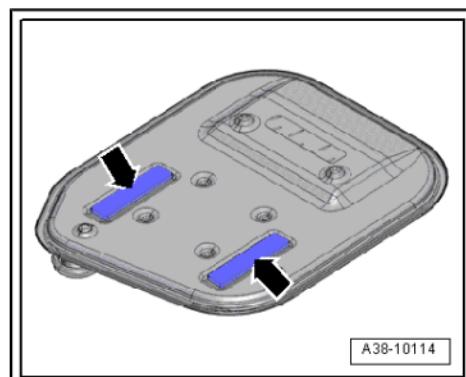
Installing

Installation is carried out in reverse sequence; note the following:

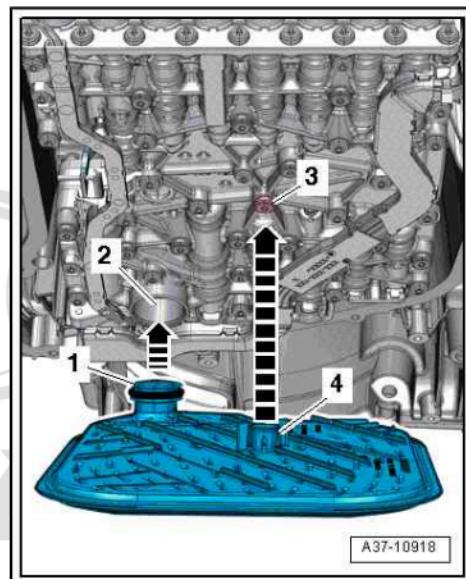
- Fit O-ring -2- on ATF filter -1-.



- Clean both magnets -arrows-. Ensure that magnets make full contact with recesses in ATF filter.



- Fit ATF filter on mechatronic unit.
 - ◆ The intake neck -1- of the ATF filter must be inserted as far as the stop in aperture -2- of the mechatronic unit.
 - ◆ The retainer -4- on the reverse side must engage on the bolt -3- located opposite on the mechatronic unit.
- Install ATF oil pan [⇒ page 122](#) .
- Fill up with ATF [⇒ page 118](#) .



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2 Mechatronic unit

For all mechatronic unit procedures, refer to ⇒ Servicing 8-speed automatic gearbox; Rep. gr. 38 ; Mechatronic unit .



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39 – Final drive - front differential

1 Final drive

⇒ [“1.1 Exploded view - final drive”, page 128](#)

⇒ [“1.2 Renewing O-ring on cover for front final drive”, page 130](#)

1.1 Exploded view - final drive

1 - Torque converter

2 - Oil seal

For torque converter

3 - Oil seal

For flange shaft (left-side)

Between final drive and gearbox housing

Renewing ⇒ [page 155](#)

4 - Shim

Behind tapered roller bearing outer race

5 - Tapered roller bearing outer race

6 - Bolt

Tightening torque and sequence ⇒ [page 129](#)

7 - Oil seal

For flange shaft (right-side)

Renewing ⇒ [page 158](#)

8 - Circlip

Renew

9 - Flange shaft (right-side)

Removing and installing ⇒ [page 162](#)

10 - Plug

For inspection and filler hole

For gear oil in front final drive

Tightening torque ⇒ [Item 5 \(page 132\)](#)

11 - Cover

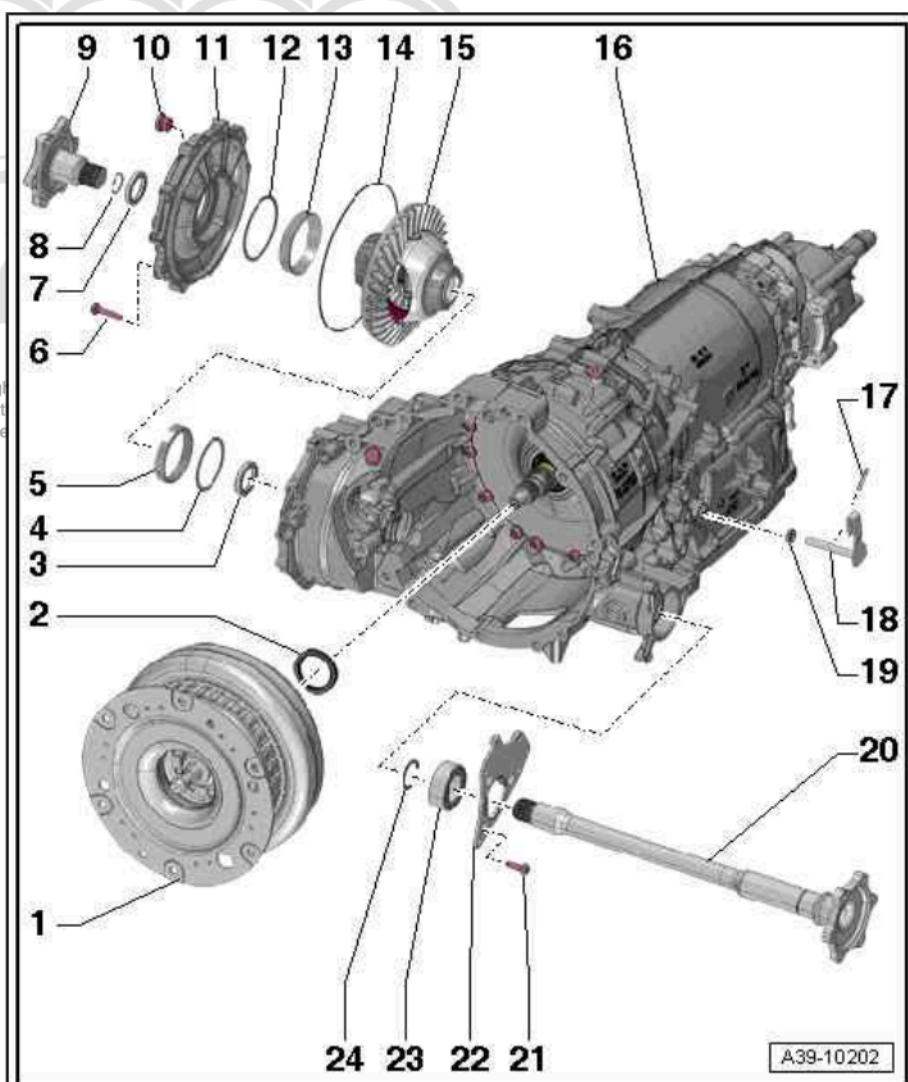
For front final drive

Pay attention to dowel sleeves

Removing and installing ⇒ [page 130](#)

12 - Shim

Behind tapered roller bearing outer race



A39-10202

13 - Tapered roller bearing outer race

14 - O-ring

- On cover for front final drive
- Renew

15 - Differential

16 - Gearbox

17 - Roll pin

- Removing and installing [⇒ "1.14 Renewing selector shaft oil seal", page 48](#)

18 - Gearbox selector lever

- Removing and installing [⇒ "1.14 Renewing selector shaft oil seal", page 48](#)

19 - Oil seal

- On gearbox selector lever
- Renewing [⇒ page 48](#)

20 - Flange shaft (left-side)

- Removing and installing [⇒ page 161](#)

21 - Bolt

- 9 Nm + 60°

22 - Mounting bracket

- For flange shaft (left-side)
- Removing and installing [⇒ page 165](#)

23 - Ball bearing

- For flange shaft (left-side)
- Renewing [⇒ page 165](#)

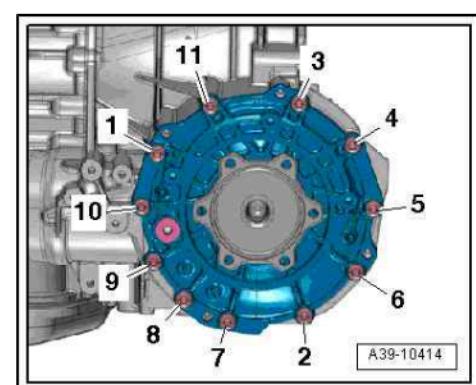
24 - Retaining clip

- Renew

Cover for front final drive - tightening torque and sequence

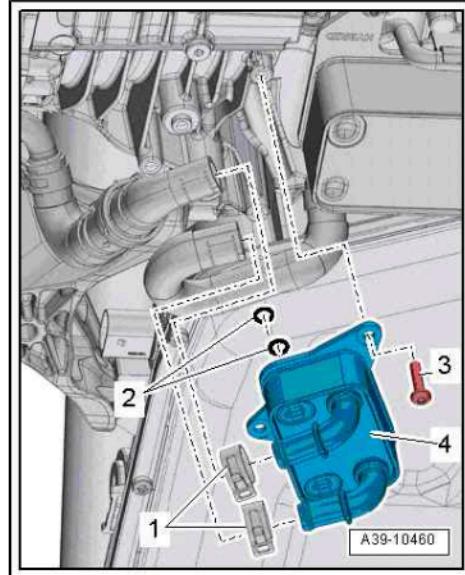
– Tighten bolts in 2 stages in the sequence shown:

Stage	Bolts	Tightening torque
1.	-1- and -6-	3 Nm
2.	-1 ... 11-	23 Nm



Radiator for front final drive - tightening torque

- Tighten bolts -3- to 9 Nm.



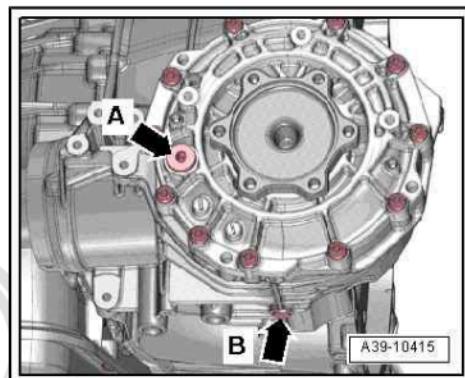
1.2 Renewing O-ring on cover for front final drive

Procedure



Note

- ◆ Refer to general repair instructions [⇒ page 6](#).
- ◆ Note rules for cleanliness when working on automatic gearbox [⇒ page 5](#).
- Open drain plug -arrow B- and drain gear oil from front final drive.
- Remove flange shaft (right-side) [⇒ page 162](#).



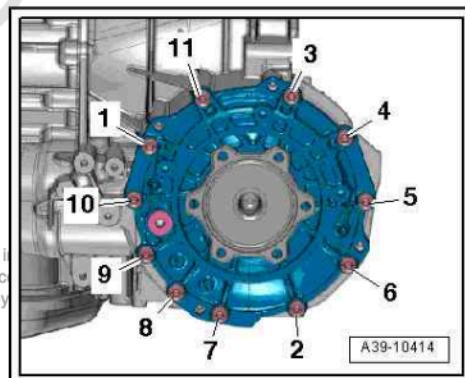
- Remove bolts securing cover for front final drive in the sequence -11 ... 1-.
- Remove cover for front final drive together with outer race for tapered roller bearing and shim.



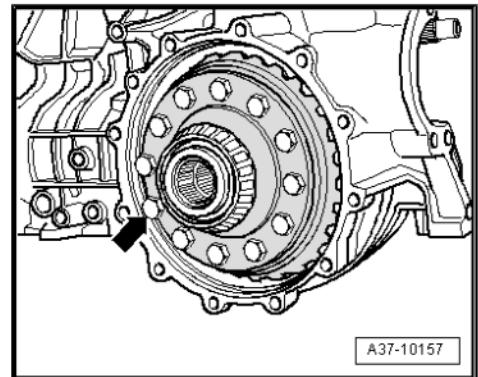
Note

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Thickness of shim has been measured to fit; the shim must not be replaced with another shim of different thickness.



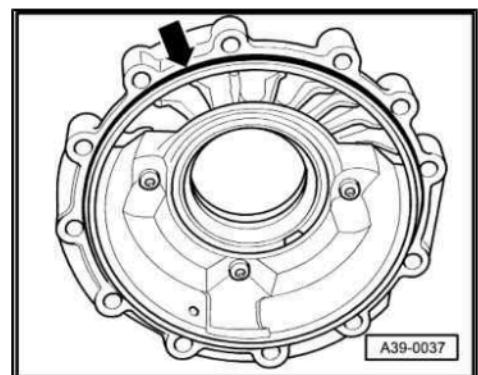
- Take out differential -arrow- or secure to prevent it dropping out.



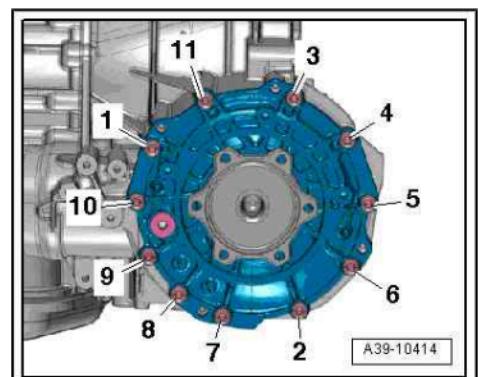
- Renew O-ring -arrow-.
- Install differential in gearbox housing.

Note the following if the outer race for tapered roller bearing and the shim have dropped out of the front final drive cover:

- Lubricate shim and outer race for tapered roller bearing with gear oil and insert in front final drive cover as far as the stop.



- Tighten bolts for front final drive cover [⇒ page 129](#) .
- Install flange shaft (right-side) [⇒ page 162](#) .
- Fill up gear oil in gearbox after repairs [⇒ page 142](#) .



Audi

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2 Gear oil

⇒ ["2.1 Overview of fitting locations - drain and inspection plugs", page 132](#)

⇒ ["2.2 Checking gear oil level", page 133](#)

⇒ ["2.3 Draining and filling gear oil", page 142](#)

2.1 Overview of fitting locations - drain and inspection plugs

1 - ATF drain plug

- Renew
- 12 Nm

2 - Drain plug

- For gear oil in transfer box
- 12 Nm

3 - Plug

- For inspection and filler hole
- For gear oil in transfer box
- 27 Nm

4 - ATF plug

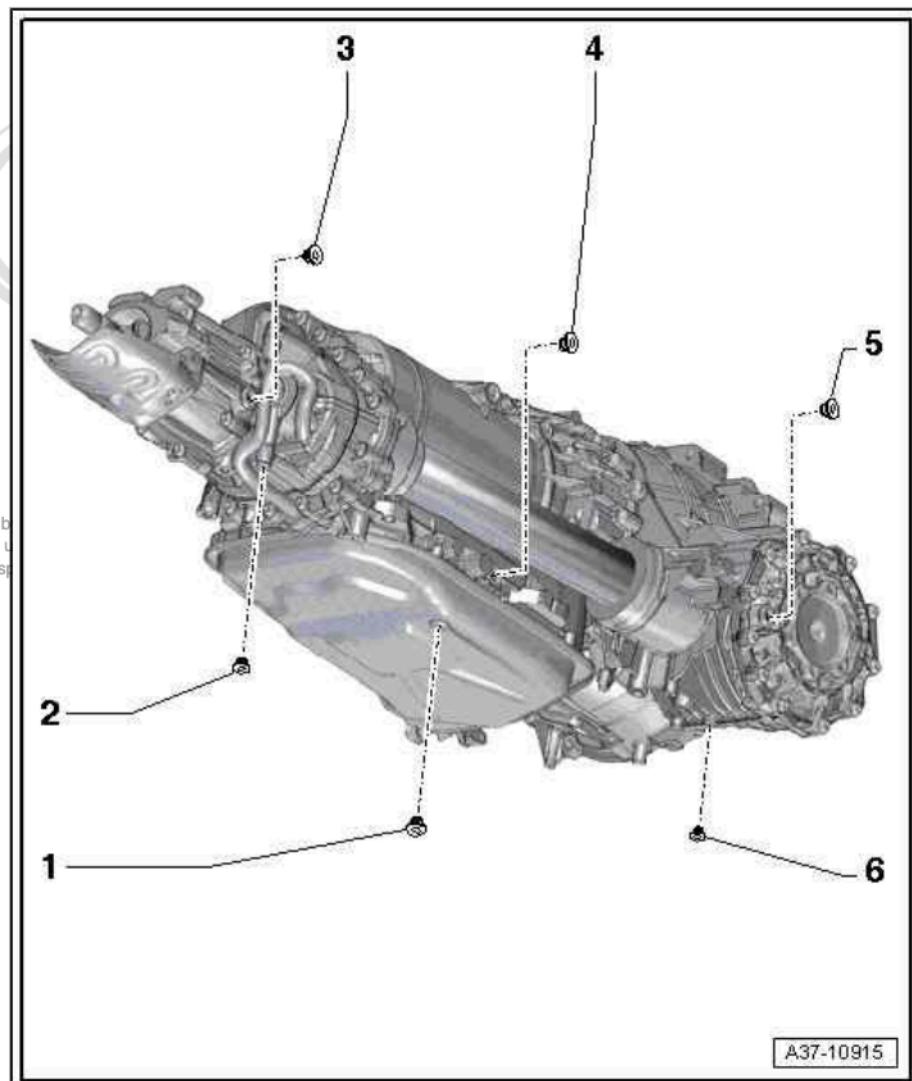
- For inspection and **filler** hole
- For ATF in gearbox
- Renew
- 30 Nm

5 - Plug

- For inspection and filler hole
- For gear oil in front final drive
- 27 Nm

6 - Drain plug

- For gear oil in front final drive
- 10 Nm



2.2 Checking gear oil level

⇒ "2.2.1 Checking gear oil level - front final drive (gearbox with separate oil systems)", page 133

⇒ "2.2.2 Checking gear oil level - transfer box (gearbox with separate oil systems)", page 136

⇒ "2.2.3 Checking gear oil level - gearbox with common oil system", page 138

2.2.1 Checking gear oil level - front final drive (gearbox with separate oil systems)



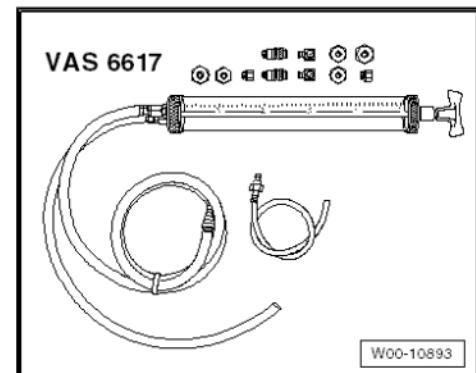
Caution

- ◆ *Risk of damage to transfer box and front axle differential if gear oil level is incorrect.*
- ◆ *Depending on engine version, gearboxes may have separate or common oil systems.*
- ◆ *On vehicles with a common oil system, the appropriate testing regulations MUST be adhered to as the oil level of the transfer box is dependent on the oil level of the front axle differential.*
- ◆ *Identification is only possible by using gearbox code letters* ⇒ "4.3 Allocation of gearbox to engine", page 12 .

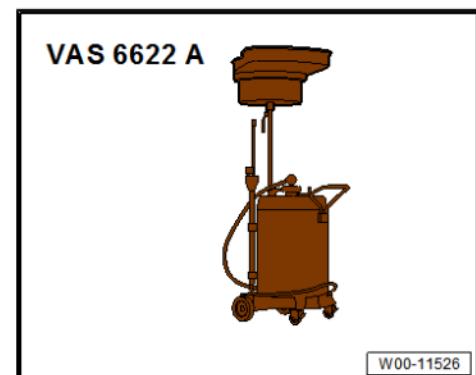
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Special tools and workshop equipment required

- ◆ Hand pump for filling gearbox - VAS 6617-



- ◆ Used oil collection and extraction unit - VAS 6622A-



- ◆ Safety goggles

Procedure

- Gear oil about 20 °C (room temperature)

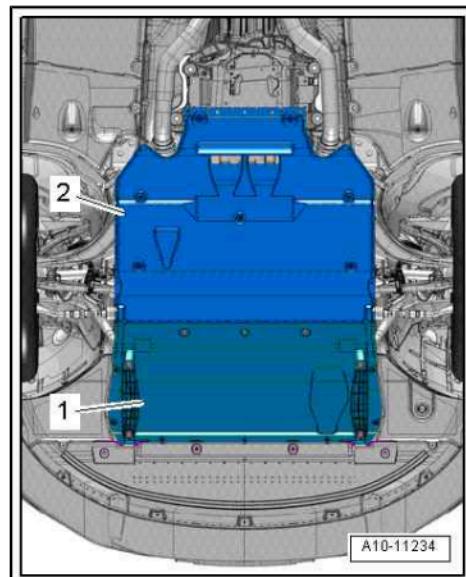
- Engine must be switched off while work is being performed.
- Vehicle must be absolutely horizontal (on a four-pillar lifting platform or over an inspection pit).
- Gearbox is in position "P".
- Parking brake button must be pulled up to apply the electro-mechanical parking brake.

 Note

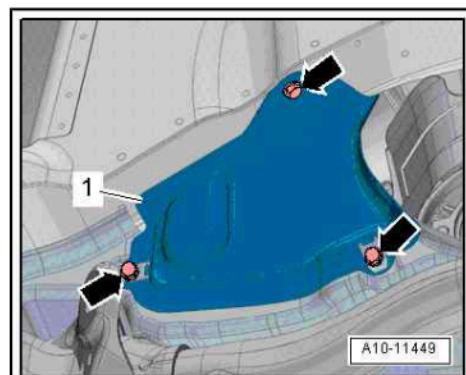
- ◆ Refer to general repair instructions [⇒ page 6](#).
- ◆ Note rules for cleanliness when working on automatic gearbox [⇒ page 5](#).
- ◆ The prescribed oil level must be adhered to exactly; the gearbox reacts very sensitively to overfilling.
- ◆ Renew plug for inspection and filler hole.
- ◆ Always adhere to waste disposal regulations.

- Remove rear noise insulation -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

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- Remove bolts -arrows- and detach heat shield (right-side) -1-.



- Audi RS 6: Remove bolts -1, 2- and push coolant pipe (right-side) on gearbox to one side.

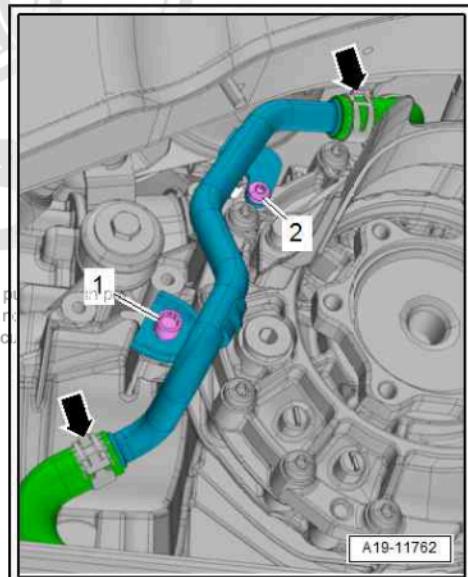


WARNING

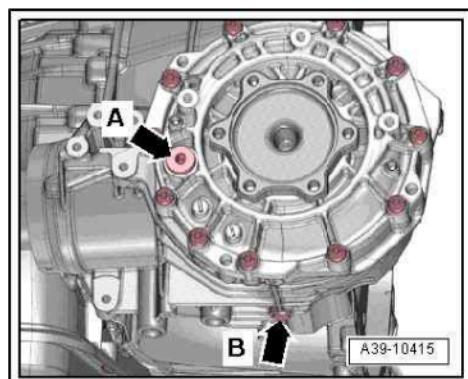
Risk of eye injury.

- ◆ *Put on safety goggles.*

- Place used oil collection and extraction unit - **VAS 6622A** below gearbox.

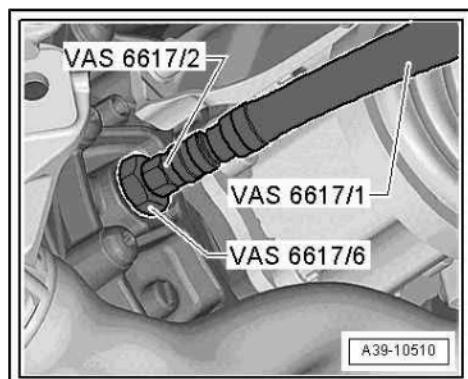


- Unscrew plug for inspection and filler hole -arrow A- on front final drive.
- Specification: The oil level is correct when the front final drive is filled up to the bottom lip of the filler hole.



If oil level is not up to bottom lip of filler hole:

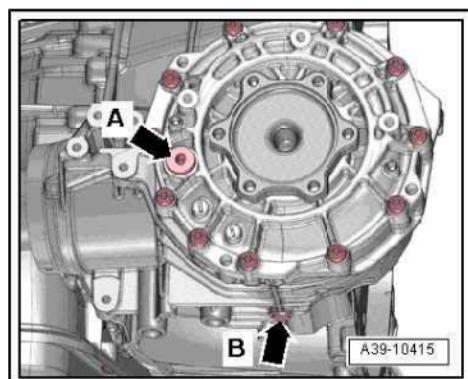
- Screw adapter - **VAS 6617/6**- with adapter - **VAS 6617/2**- hand-tight into gearbox.
- Connect hand pump for gear oil - **VAS 6617**- and fill up with the necessary amount of gear oil. Gear oil specifications ⇒ Electronic parts catalogue
- Then detach adapter - **VAS 6617/6**- from gearbox and allow excess gear oil to drain off.



- Tighten new plug -arrow A- on front final drive.
- Audi RS 6: Install coolant pipe on gearbox (right-side) ⇒ Rep. gr. 19 ; Coolant pipes; Removing and installing coolant pipes .

Tightening torques

- ◆ ⇒ ["2.1 Overview of fitting locations - drain and inspection plugs", page 132](#)
- ◆ Heat shield on subframe ⇒ General body repairs, exterior; Rep. gr. 66 ; Strips / trim panels / extensions; Exploded view - heat shield
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation



2.2.2 Checking gear oil level - transfer box (gearbox with separate oil systems)

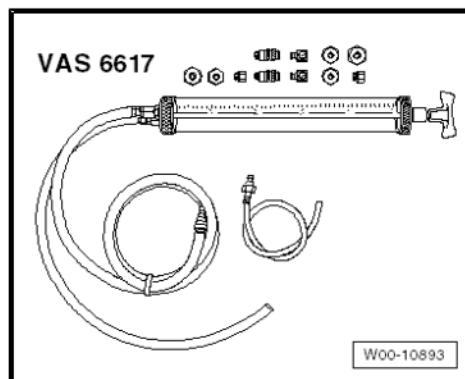


Caution

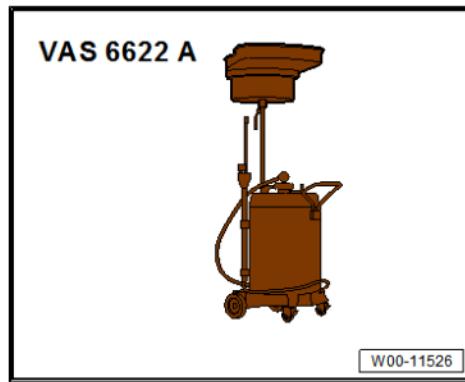
- ◆ *Risk of damage to transfer box and front axle differential if gear oil level is incorrect.*
- ◆ *Depending on engine version, gearboxes may have separate or common oil systems.*
- ◆ *On vehicles with a common oil system, the appropriate testing regulations MUST be adhered to as the oil level of the transfer box is dependent on the oil level of the front axle differential.*
- ◆ *Identification is only possible by using gearbox code letters* ⇒ *"4.3 Allocation of gearbox to engine", page 12* .

Special tools and workshop equipment required

- ◆ Hand pump for filling gearbox - VAS 6617-



- ◆ Used oil collection and extraction unit - VAS 6622A-



- ◆ Safety goggles

Procedure

- Gear oil about 20 °C (room temperature)
- Engine must be switched off while work is being performed.
- Vehicle must be absolutely horizontal (on a four-pillar lifting platform or over an inspection pit).
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- The vehicle must be stationary with the engine switched off for at least 15 minutes to allow the oil level to stabilise.
- Gearbox is in position "P".
- Parking brake button must be pulled up to apply the electro-mechanical parking brake.



Note

- ◆ Refer to general repair instructions [⇒ page 6](#).
- ◆ Note rules for cleanliness when working on automatic gearbox [⇒ page 5](#).
- ◆ Always adhere to waste disposal regulations.
- ◆ Renew drain plug with seal.
- ◆ Renew plug for inspection and filler hole.

- Place used oil collection and extraction unit - **VAS 6622A** - below gearbox.

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WARNING

Risk of eye injury.

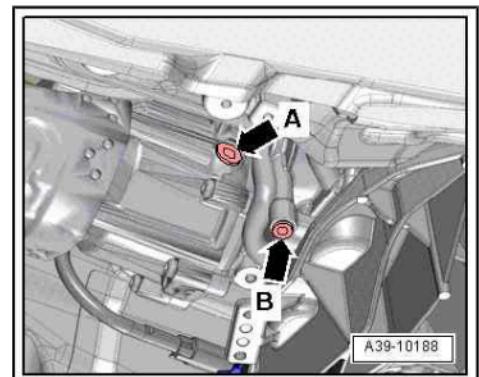
- ◆ Put on safety goggles.



Note

A cloth should be placed on the tunnel cross member to prevent gear oil from running into the casting pockets on the tunnel cross member.

- Unscrew plug for inspection and filler hole -arrow A- on centre differential housing.
- Specification: Oil level is correct when oil in transfer box is up to lower edge of filler hole.



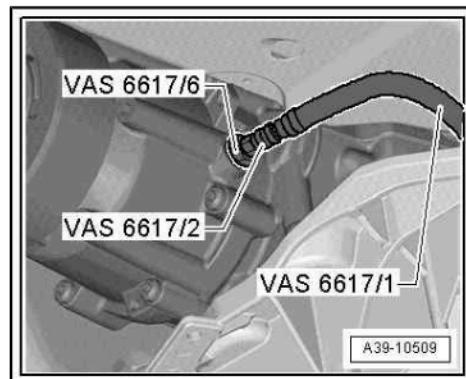
If oil level is not up to bottom lip of filler hole:

- Screw adapter - VAS 6617/6- with adapter - VAS 6617/2- hand-tight into inspection and filler hole for transfer box.



Note

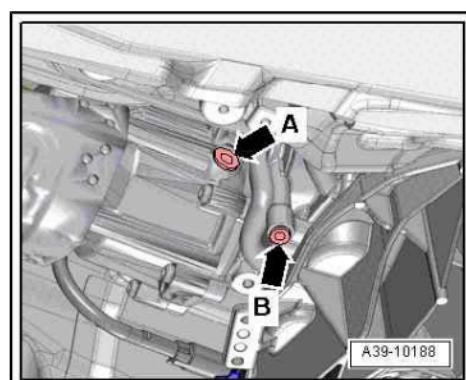
After a repair or an oil change, pre-fill transfer box with about 0.8 ltr. of gear oil then wait at least five minutes so that the internal oil level can be balanced out between the centre differential and the baffle chamber. Then check oil level again (follow instructions).



- Connect hand pump for gear oil - VAS 6617- and fill up transfer box with the necessary amount of gear oil. Gear oil specifications ⇒ Electronic parts catalogue
- Wait for 5 minutes.
- Then detach adapter - VAS 6617/6- from gearbox and allow excess gear oil to drain off.
- Specification: Oil level is correct when oil in transfer box is up to lower edge of filler hole. Top up with gear oil once again if necessary.
- Tighten new plug -arrow A- on housing for centre differential.
- Remove cloth from tunnel cross member.

Tightening torques

- ◆ ⇒ ["2.1 Overview of fitting locations - drain and inspection plugs", page 132](#)



2.2.3 Checking gear oil level - gearbox with common oil system



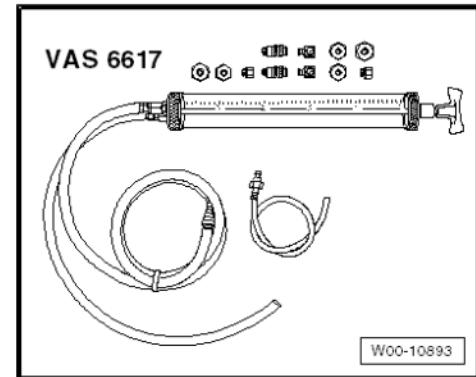
Caution

- ◆ *Risk of damage to transfer box and front axle differential if gear oil level is incorrect.*
- ◆ *Depending on engine version, gearboxes may have separate or common oil systems.*
- ◆ *On vehicles with a common oil system, the appropriate testing regulations MUST be adhered to as the oil level of the transfer box is dependent on the oil level of the front axle differential.*
- ◆ *Identification is only possible by using gearbox code letters ⇒ ["4.3 Allocation of gearbox to engine", page 12](#).*

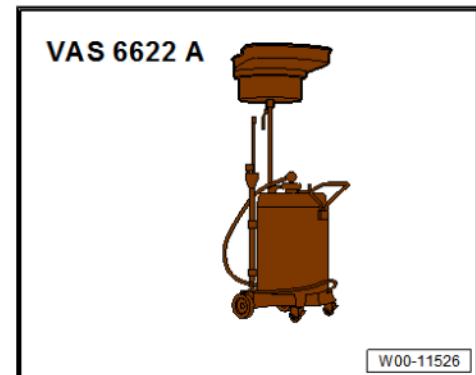
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Special tools and workshop equipment required

- ◆ Hand pump for filling gearbox - VAS 6617-



- ◆ Used oil collection and extraction unit - VAS 6622A-



- ◆ Safety goggles

Procedure

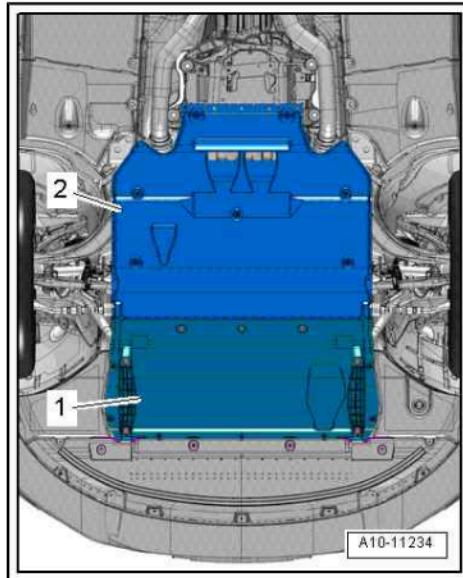
- Gear oil about 20 °C (room temperature)
- Engine must be switched off while work is being performed.
- Vehicle must be absolutely horizontal (on a four-pillar lifting platform or over an inspection pit).
- The vehicle must be stationary with the engine switched off for at least 15 minutes to allow the oil level to stabilise.
- Gearbox is in position "P".
- Parking brake button must be pulled up to apply the electro-mechanical parking brake.



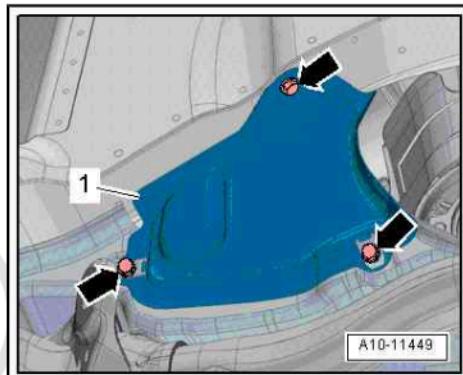
Note

- ◆ *Refer to general repair instructions [⇒ page 6](#).*
- ◆ *Note rules for cleanliness when working on automatic gearbox [⇒ page 5](#).*
- ◆ *Always adhere to waste disposal regulations.*
- ◆ *Renew drain plug with seal.*
- ◆ *Renew plug for inspection and filler hole.*

- Remove rear noise insulation -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



- Remove bolts -arrows- and detach heat shield (right-side) -1-.



- Audi RS 6: Remove bolts -1, 2- and push coolant pipe (right-side) on gearbox to one side.
- Place used oil collection and extraction unit - VAS 6622A- below gearbox.

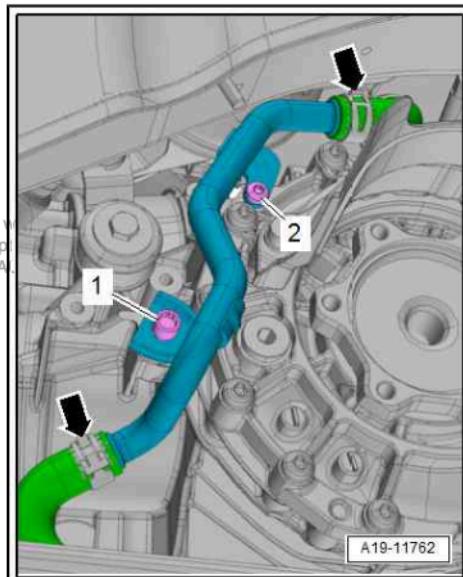


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Risk of eye injury:

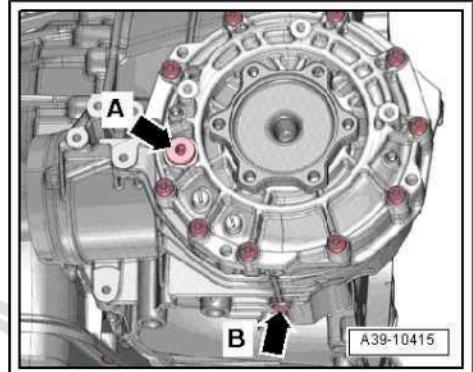
◆ Put on safety goggles.



Note

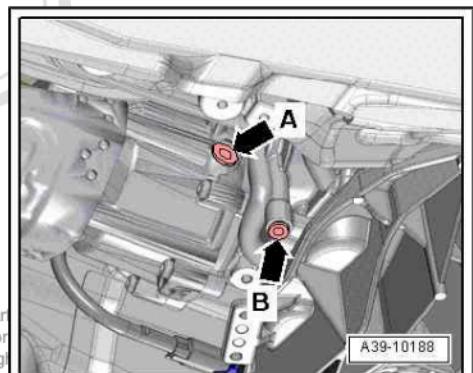
A cloth should be placed on the tunnel cross member to prevent gear oil from running into the casting pockets on the tunnel cross member.

- Unscrew plug for inspection and filler hole -arrow A- on front final drive.



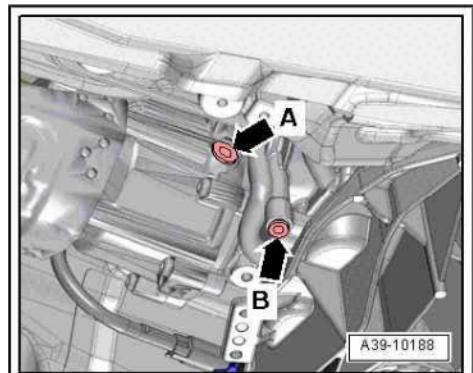
- Unscrew plug for inspection and filler hole -arrow A- on centre differential housing.
- Specification: The oil level is correct when the final drive (at front) and the transfer box (at rear) are filled up to the bottom lip of the filler hole.

If oil level is not up to bottom lip of filler hole:



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- Screw adapter - VAS 6617/6- hand-tight into inspection hole for transfer box -arrow A- together with adapter - VAS 6617/2- and fill up to bottom lip of inspection hole with gear oil. Do not close inspection hole yet. Gear oil specifications ⇒ Electronic parts catalogue

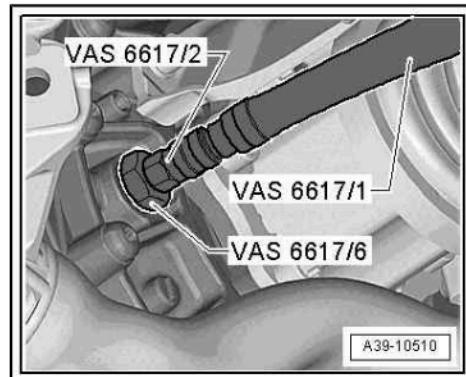


- Screw adapter - VAS 6617/6- hand-tight into inspection hole for front final drive together with adapter - VAS 6617/2- and fill up to bottom lip of inspection hole with gear oil.
- Then overfill with approx. 1 ltr. gear oil at front.
- Wait to allow an equalisation period until gear oil emerges from inspection hole for transfer box (at rear).
- Seal inspection hole for transfer box (at rear) as soon as oil emerges.



Note

By overfilling, the oil flows from the front final drive to the rear of the transfer box as part of the internal oil level balancing system.



- Then detach adapter - VAS 6617/6- from gearbox and allow excess gear oil to drain off at front of final drive.
- Renew both inspection plugs and tighten.
- Audi RS 6: Install coolant pipe on gearbox (right-side) ⇒ Rep. gr. 19 ; Coolant pipes; Removing and installing coolant pipes .

Tightening torques

- ◆ ⇒ ["2.1 Overview of fitting locations - drain and inspection plugs", page 132](#)
- ◆ Heat shield on subframe ⇒ General body repairs, exterior; Rep. gr. 66 ; Strips / trim panels / extensions; Exploded view - heat shield
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation

2.3 Draining and filling gear oil

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⇒ ["2.3.1 Draining and filling gear oil - front final drive \(gearbox with separate oil systems\)", page 142](#)

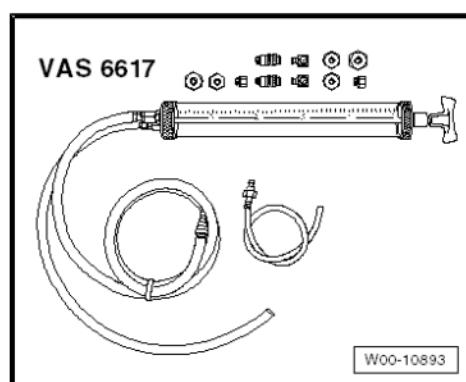
⇒ ["2.3.2 Draining and filling gear oil - transfer box \(gearbox with separate oil systems\)", page 145](#)

⇒ ["2.3.3 Draining and filling gear oil - gearbox with common oil system", page 148](#)

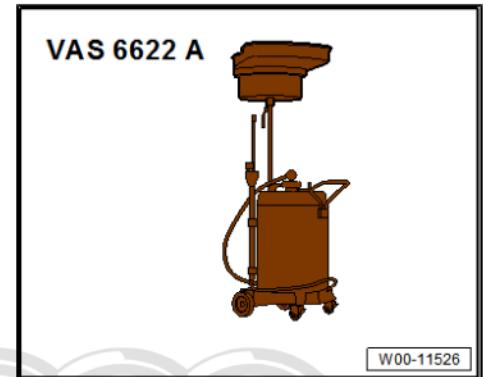
2.3.1 Draining and filling gear oil - front final drive (gearbox with separate oil systems)

Special tools and workshop equipment required

- ◆ Hand pump for filling gearbox - VAS 6617-



- ◆ Used oil collection and extraction unit - VAS 6622A-



- ◆ Safety goggles

Draining

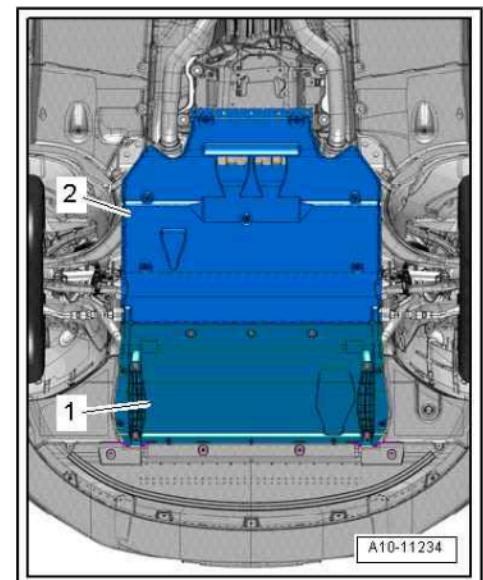
- Engine not running.
- Vehicle must be absolutely horizontal (on a four-pillar lifting platform or over an inspection pit).
- Gearbox is in position "P".
- Parking brake button must be pulled up to apply the electro-mechanical parking brake.



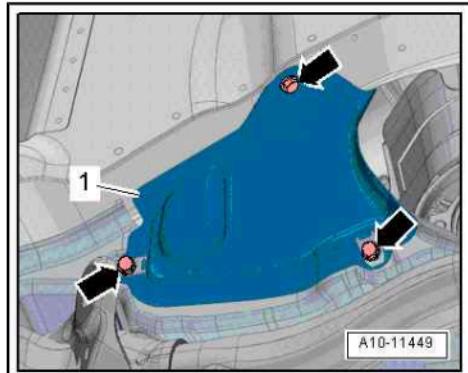
Note

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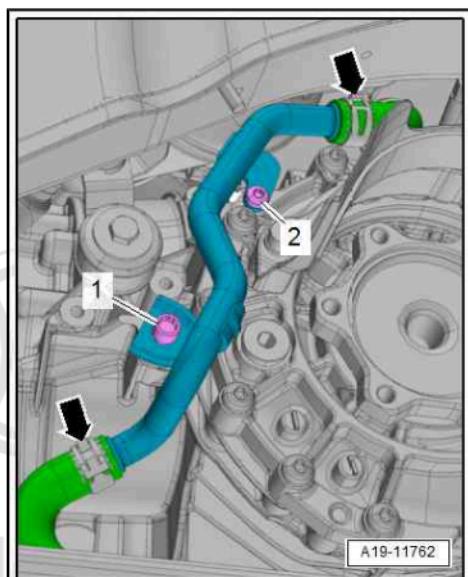
- ◆ ⇒ "3.3 General repair instructions", page 6
- ◆ ⇒ "3.1 Rules for cleanliness", page 5
- ◆ *Always adhere to waste disposal regulations.*
- ◆ *Renew drain plug with seal.*
- ◆ *Renew plug for inspection and filler hole.*
- Remove rear noise insulation -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



- Remove bolts -arrows- and detach heat shield (right-side)
-1-.



- Audi RS 6: Remove bolts -1, 2- and push coolant pipe (right-side) on gearbox to one side.



- Place used oil collection and extraction unit - VAS 6622- below gearbox.

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WARNING

Risk of eye injury.

- ◆ *Put on safety goggles.*

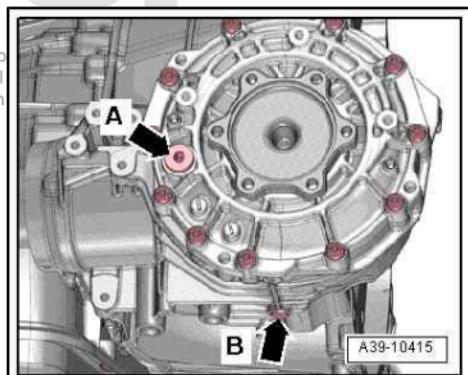
- Unscrew drain plug -arrow B- on front final drive and drain off gear oil.



Caution

Risk of damage to gearbox

- ◆ *The engine must not be started when there is no more gear oil in the front final drive.*



- Tighten new drain plug -arrow B- on front final drive.

Filling up and adjusting oil level

- Gear oil about 20 °C (room temperature)

- Place used oil collection and extraction unit - VAS 6622- below gearbox.

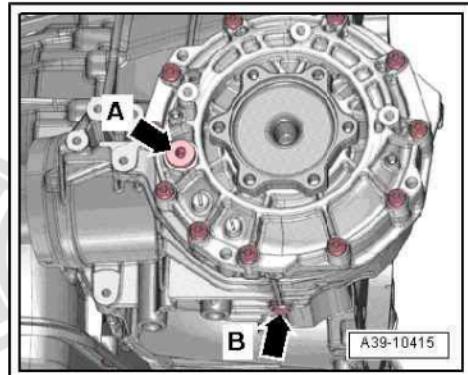


WARNING

Risk of eye injury.

- ◆ Put on safety goggles.

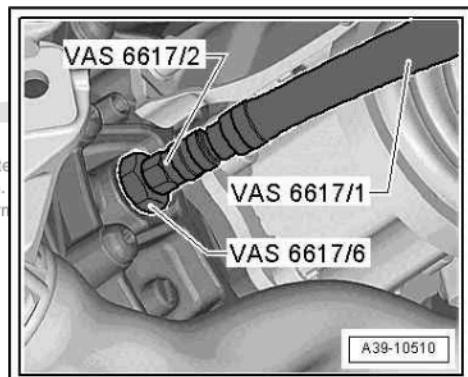
- Unscrew plug for inspection and filler hole -arrow A- on front final drive.
- Screw adapter -VAS 6617/6- with adapter -VAS 6617/2- hand-tight into inspection and filler hole for front final drive.
- Connect hand pump for filling gearbox - VAS 6617- and fill up front final drive with approx. 1.0 ltr. of gear oil.
- Gear oil specifications ⇒ **Electronic parts catalogue**
- Wait for 5 minutes.



Note

It is necessary to wait for at least 5 minutes to allow the internal oil level to balance out between the differential and the baffle chamber.

- Then detach -VAS 6617/6- from gearbox and allow excess gear oil to drain off.
- Tighten new plug -arrow A- on front final drive.



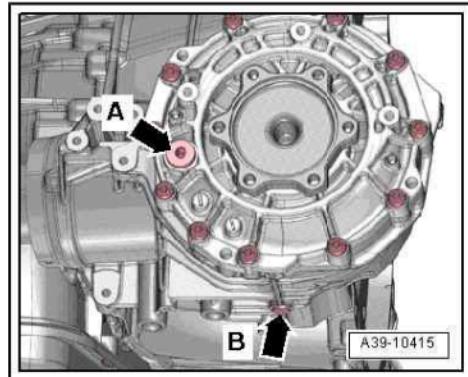
Note

The level does not need to be re-checked after this step.

- Audi RS 6: Install coolant pipe on gearbox (right-side) ⇒ Rep. gr. 19 ; Coolant pipes; Removing and installing coolant pipes .

Tightening torques

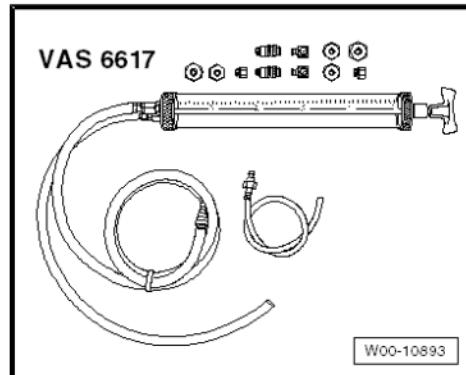
- ◆ ⇒ [“2.1 Overview of fitting locations - drain and inspection plugs”, page 132](#)
- ◆ Heat shield on subframe ⇒ General body repairs, exterior; Rep. gr. 66 ; Strips / trim panels / extensions; Exploded view - heat shield
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation



2.3.2 Draining and filling gear oil - transfer box (gearbox with separate oil systems)

Special tools and workshop equipment required

- ◆ Hand pump for filling gearbox - VAS 6617-



- ◆ Used oil collection and extraction unit - VAS 6622A-



- ◆ Safety goggles

Draining

- Engine not running.
- Vehicle must be absolutely horizontal (on a four-pillar lifting platform or over an inspection pit).
- Gearbox is in position "P".
- Parking brake button must be pulled up to apply the electro-mechanical parking brake.

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Note

- ◆ ⇒ "3.3 General repair instructions", page 6
- ◆ ⇒ "3.1 Rules for cleanliness", page 5
- ◆ *Always adhere to waste disposal regulations.*
- ◆ *Renew drain plug with seal.*
- ◆ *Renew plug for inspection and filler hole.*

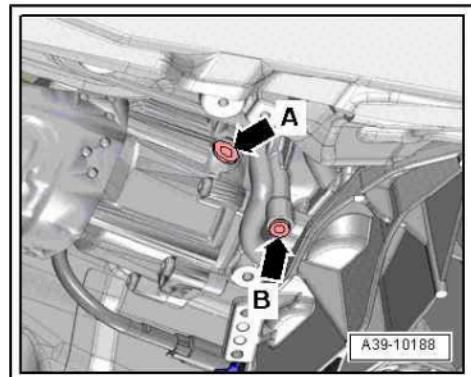
- Place used oil collection and extraction unit - VAS 6622- below gearbox.



WARNING

Risk of eye injury.

- ◆ *Put on safety goggles.*



- Remove drain plug -arrow B- and allow gear oil to drain off.



Caution

Risk of damage to gearbox

- ◆ *The engine must not be started when there is no gear oil in the transfer box.*

- Tighten new drain plug -arrow B-.

Filling up and adjusting oil level

- Gear oil about 20 °C (room temperature)
- Place used oil collection and extraction unit - VAS 6622- below gearbox.

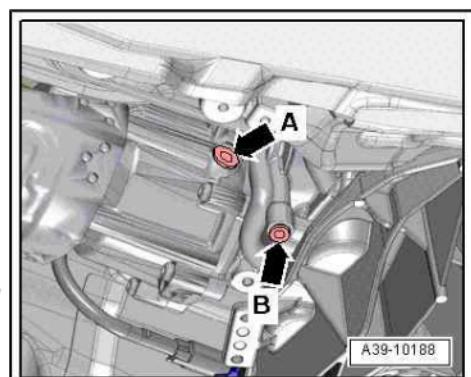


WARNING

Risk of eye injury.

- ◆ *Put on safety goggles.*

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– Unscrew plug for inspection and filler hole -arrow A- on centre differential housing.



- Screw adapter -VAS 6617/6- with adapter -VAS 6617/2- hand-tight into inspection and filler hole for transfer box.
- Connect hand pump for filling gearbox - VAS 6617- and fill up transfer box with approx. 1.0 ltr. of gear oil.

- Gear oil specifications ⇒ Electronic parts catalogue

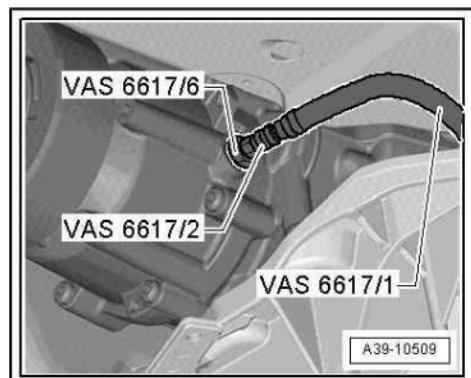
- Wait for 5 minutes.



Note

- ◆ *The transfer box incorporates a number of internal oil chambers. These must be filled evenly.*
- ◆ *It is necessary to wait for at least 5 minutes to allow the internal oil level to balance out between the centre differential and the baffle chamber.*

- Then detach -VAS 6617/6- from gearbox and allow excess gear oil to drain off.
- Specification: Oil level is correct when oil in transfer box is up to lower edge of filler hole. Top up with gear oil once again if necessary.



- Tighten new plug -arrow A- on housing for centre differential.

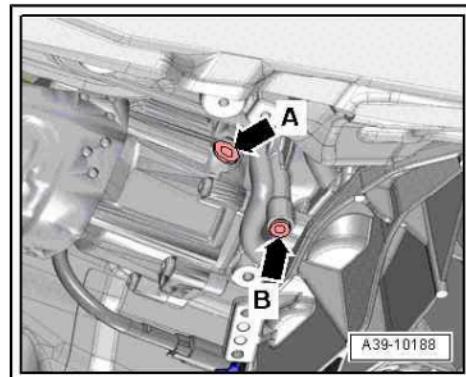


Note

The level does not need to be re-checked after this step.

Tightening torques

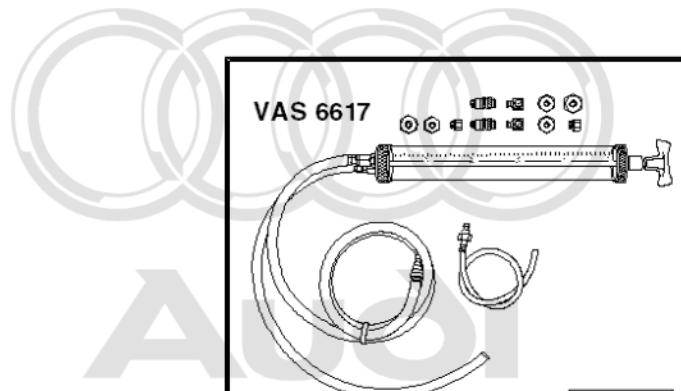
- ◆ [⇒ "2.1 Overview of fitting locations - drain and inspection plugs", page 132](#)



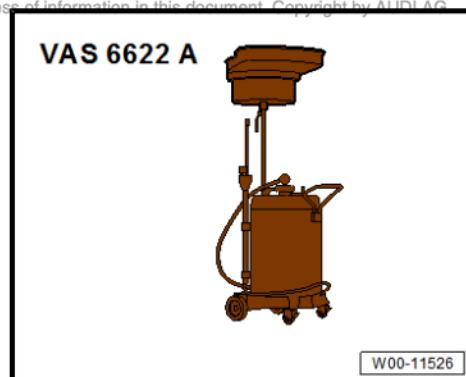
2.3.3 Draining and filling gear oil - gearbox with common oil system

Special tools and workshop equipment required

- ◆ Hand pump for filling gearbox - VAS 6617-



- ◆ Used oil collection and extraction unit - VAS 6622A-



- ◆ Safety goggles

Draining

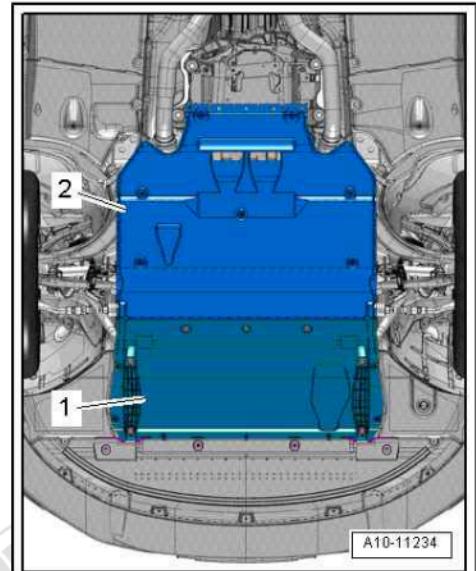
- Engine not running.
- Vehicle must be absolutely horizontal (on a four-pillar lifting platform or over an inspection pit).
- Gearbox is in position "P".
- Parking brake button must be pulled up to apply the electro-mechanical parking brake.



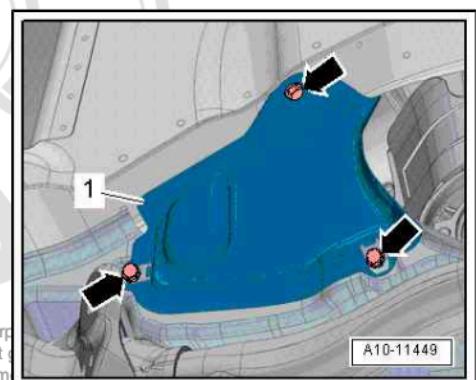
Note

- ◆ [→ "3.3 General repair instructions", page 6](#)
- ◆ [→ "3.1 Rules for cleanliness", page 5](#)
- ◆ Always adhere to waste disposal regulations.
- ◆ Renew drain plugs with seals.

– Remove rear noise insulation -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

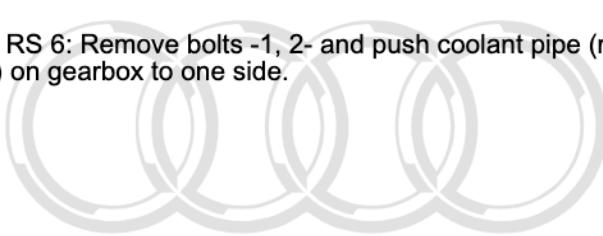


– Remove bolts -arrows- and detach heat shield (right-side) -1-.



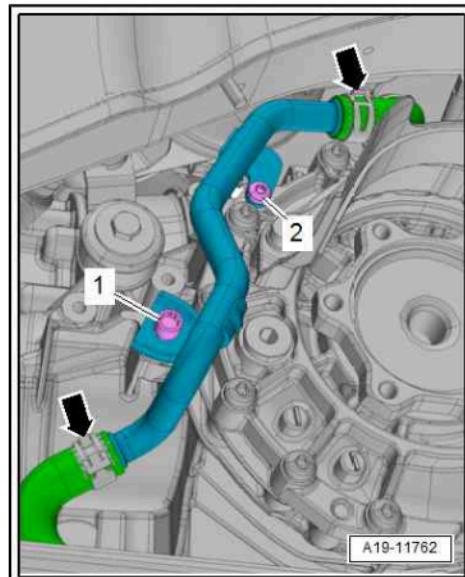
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- Audi RS 6: Remove bolts -1, 2- and push coolant pipe (right-side) on gearbox to one side.



Audi

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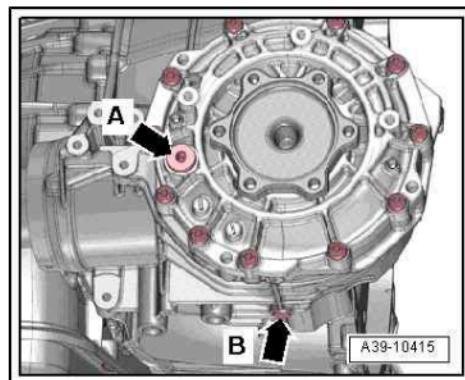
- Place used oil collection and extraction unit - VAS 6622- below gearbox.



WARNING

Risk of eye injury.

- ◆ *Put on safety goggles.*



- Unscrew drain plug -arrow B- on front final drive and drain off gear oil.



Caution

Risk of damage to gearbox

- ◆ *The engine must not be started when there is no more gear oil in the front final drive.*

- Tighten new drain plug on front final drive -arrow B-.

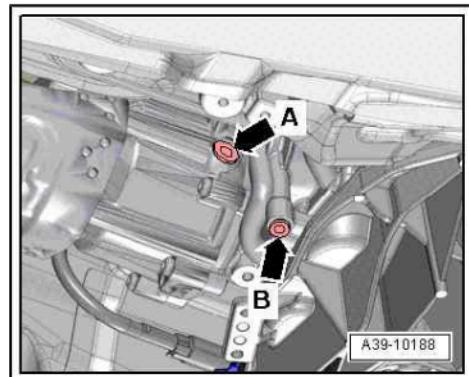
- Place used oil collection and extraction unit - VAS 6622- below gearbox.



WARNING

Risk of eye injury.

- ◆ *Put on safety goggles.*



- Unscrew drain plug -arrow B- on centre differential housing and drain off gear oil.



Caution

Risk of damage to gearbox

- ◆ *The engine must not be started when there is no gear oil in the transfer box.*

- Tighten new drain plug on centre differential housing -arrow B-.

Filling up and adjusting oil level

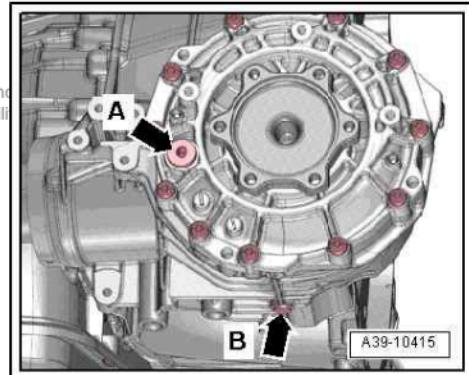
- Gear oil about 20 °C (room temperature)
- Place used oil collection and extraction unit - VAS 6622- below gearbox.



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Risk of eye injury.

- ◆ *Put on safety goggles.*



- Remove plug -arrow A- on front final drive.

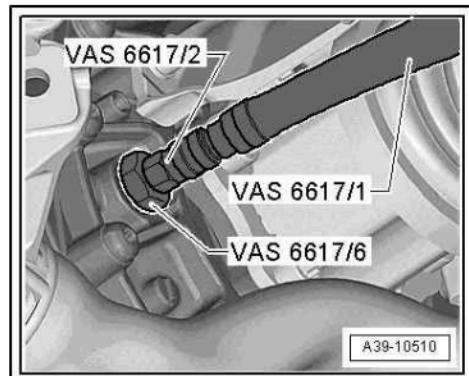
- Screw adapter -VAS 6617/6- with adapter -VAS 6617/2- hand-tight into inspection and filler hole for front final drive.
- Connect hand pump for filling gearbox - VAS 6617- and fill up front final drive with approx. 1.0 ltr. of gear oil.
- Gear oil specifications ⇒ Electronic parts catalogue
- Wait for 5 minutes.



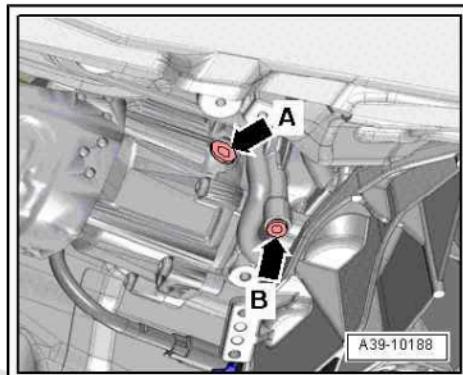
Note

It is necessary to wait for at least 5 minutes to allow the internal oil level to balance out between the differential and the baffle chamber.

- Then detach -VAS 6617/6- from gearbox and allow excess gear oil to drain off.
- Re-install used screw plug.



- Remove plug -arrow A- on housing for centre differential.



- Screw adapter -VAS 6617/6- with adapter -VAS 6617/2- hand-tight into inspection and filler hole for transfer box.
- Connect hand pump for filling gearbox - VAS 6617- and fill up transfer box with approx. 1.0 ltr. of gear oil.
- Gear oil specifications ⇒ Electronic parts catalogue
- Wait for 5 minutes.

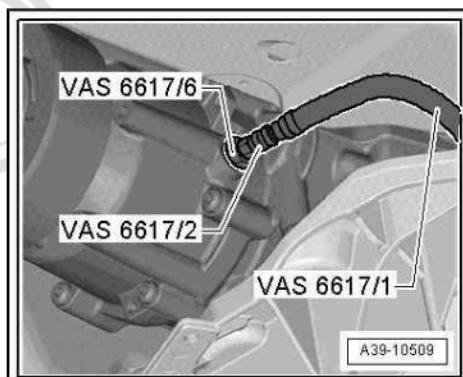
 Note

◆ *The transfer box incorporates a number of internal oil chambers. These must be filled evenly.*

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◆ *It is necessary to wait for at least 5 minutes to allow the internal oil level to balance out between the centre differential and the baffle chamber.*

- Then detach -VAS 6617/6- from gearbox and allow excess gear oil to drain off.
- Re-install used screw plug.
- Road test vehicle for 10 to 15 minutes.



 Note

The oil filling will be distributed evenly when the vehicle is driven.

- Check gear oil level and top up as required [⇒ page 133](#) .

Tightening torques

- ◆ [⇒ "2.1 Overview of fitting locations - drain and inspection plugs", page 132](#)
- ◆ Heat shield on subframe ⇒ General body repairs, exterior; Rep. gr. 66 ; Strips / trim panels / extensions; Exploded view - heat shield
- ◆ [⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation](#)

3 Gear oil cooler and pipes

⇒ "3.1 Removing and installing gear oil cooler", page 153

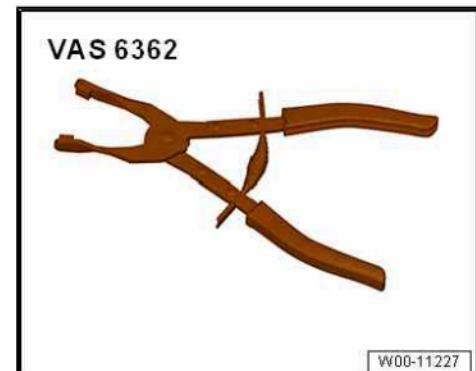
3.1 Removing and installing gear oil cooler

Special tools and workshop equipment required

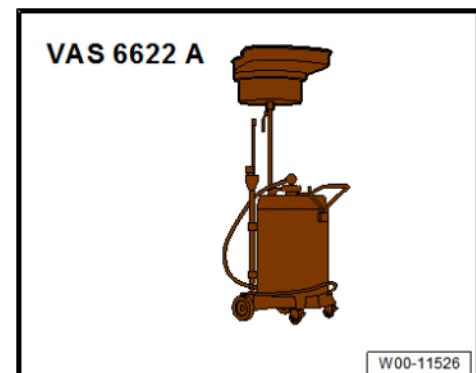
- ◆ Hose clamps, up to 25 mm - 3094-



- ◆ Hose clip pliers - VAS 6362-

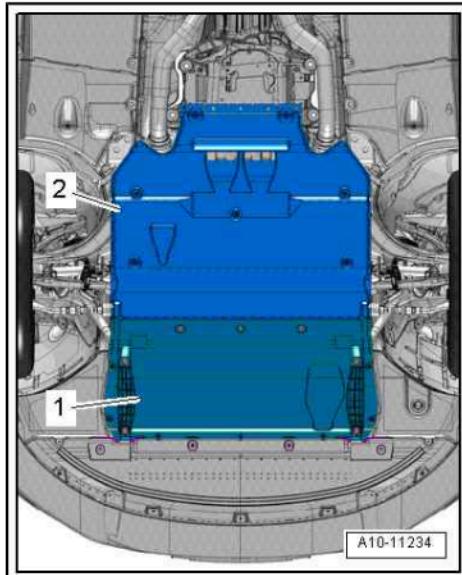


- ◆ Used oil collection and extraction unit - VAS 6622A-



Removing

- Remove rear noise insulation -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



Note

Place a cloth below to catch escaping coolant.

- Clamp off coolant hoses at gear oil cooler -3094- .
- Release hose clips -1- and detach coolant hoses.
- Place used oil collection and extraction unit - VAS 6622A- below gearbox.
- Remove bolts -3- and detach radiator -4- for front final drive.

Installing

Installation is carried out in reverse order; note the following:



Note

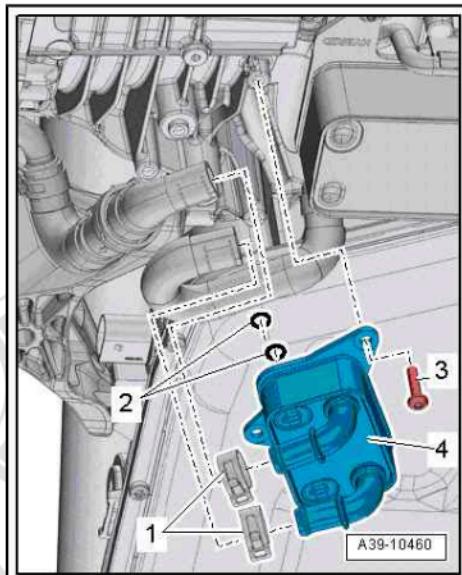
Renew O-rings -2-.

- Check gear oil level in front final drive [⇒ page 133](#) .

Tightening torques

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- ◆ [⇒ Fig. "Radiator for front final drive - tightening torque" page 130](#)



4 Oil seals

⇒ "4.1 Overview of fitting locations - oil seals", page 155

⇒ "4.2 Renewing oil seal (left-side)", page 155

⇒ "4.3 Renewing oil seal (right-side)", page 158

4.1 Overview of fitting locations - oil seals

1 - Oil seal

- For torque converter
- ⇒ Servicing 8-speed automatic gearbox; Rep. gr. 32 ; Torque converter; Removing and installing oil seal for torque converter

2 - Oil seal (left-side)

- For flange shaft
- Renewing ⇒ [page 155](#)

3 - O-ring

- On cover for front final drive
- Renewing ⇒ [page 130](#)

4 - Cover for front final drive

- Removing and installing
⇒ "1.2 Renewing O-ring on cover for front final drive", page 130

5 - Oil seal (right-side)

- For flange shaft
- Renewing ⇒ [page 158](#)

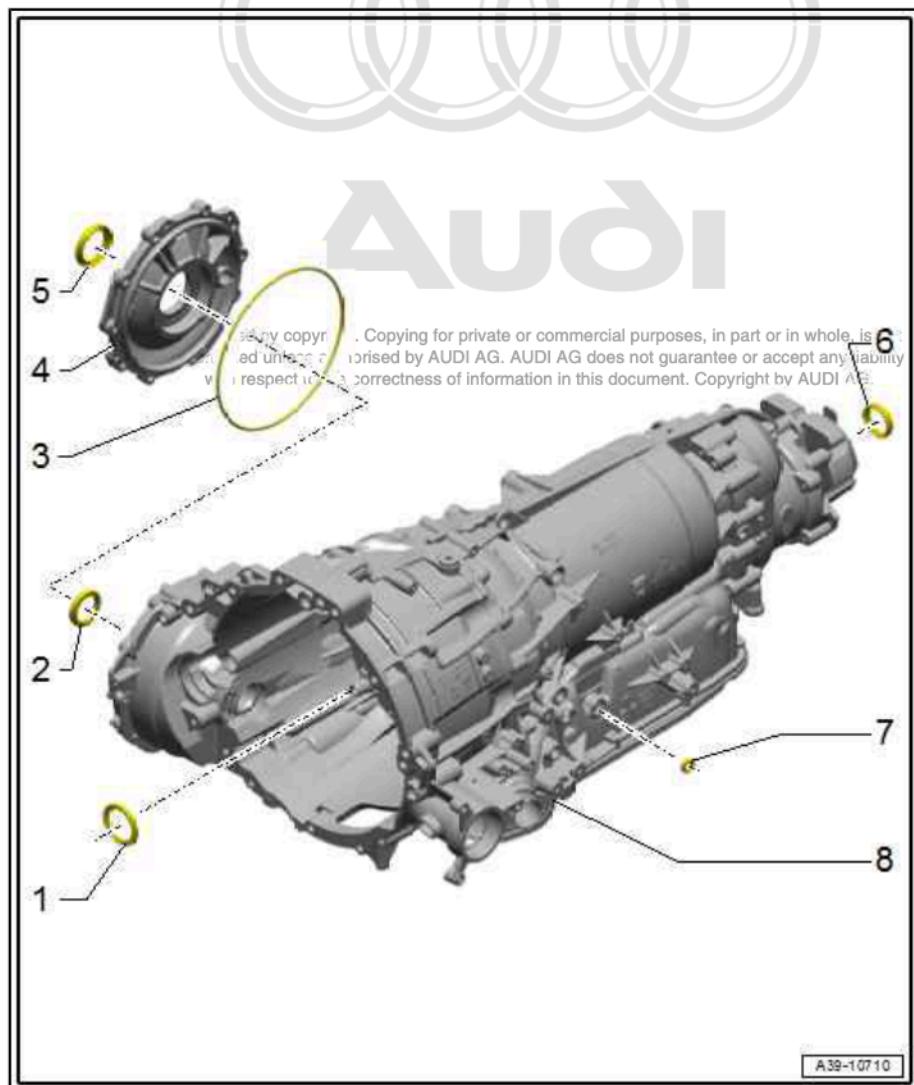
6 - Oil seal

- For rear splined shaft
- Renewing ⇒ Servicing 8-speed automatic gearbox; Rep. gr. 39 ; Centre differential; Renewing oil seal for rear splined shaft

7 - Oil seal

- For selector shaft
- Renewing ⇒ [page 48](#)

8 - Gearbox



4.2 Renewing oil seal (left-side)



Note

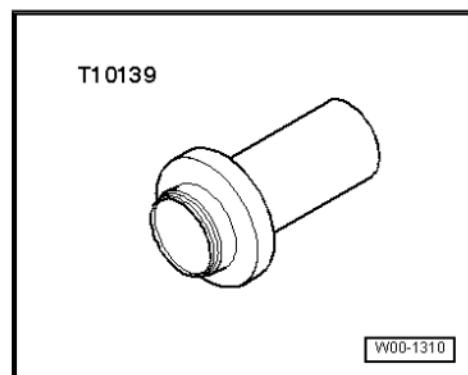
A defective oil seal allows gear oil to enter the torque converter bellhousing.

Special tools and workshop equipment required

- ◆ Oil seal extractor lever - VW 681- or extractor tool -T20143/2-



- ◆ Thrust piece - T10139-



Procedure

- Gearbox must be removed and secured to engine/gearbox support [⇒ page 106](#) .



Caution

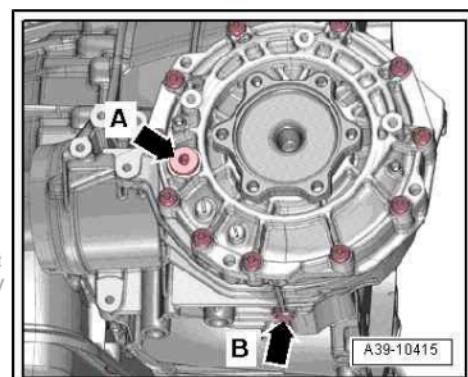
Risk of damage to gearbox components if gearbox is not supported correctly when removed.

- ◆ The gearbox must not be placed down on the ATF cooler or ATF oil pan.



Note

- ◆ Refer to general repair instructions [⇒ page 6](#) .
- ◆ Note rules for cleanliness when working on automatic gearbox [⇒ page 5](#) .
- Open drain plug -arrow B- and drain gear oil from front final drive.
- Remove flange shaft (right-side) [⇒ page 162](#) .
- Screw in and tighten drain plug -arrow B-.



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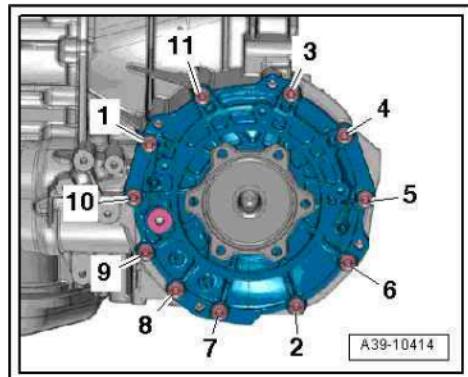
- Remove bolts securing cover for front final drive in the sequence -11 ... 1-.
- Remove cover for front final drive together with outer race for tapered roller bearing and shim.



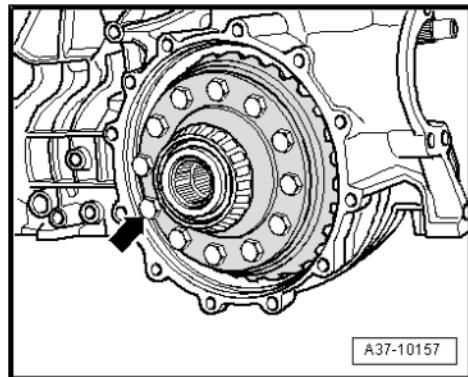
Note

Thickness of shim has been measured to fit; the shim must not be replaced with another shim of different thickness.

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- Remove differential -arrow-.

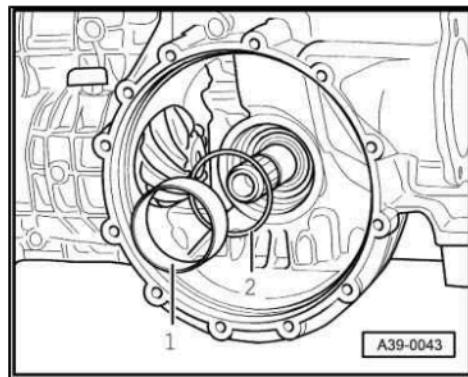


- Remove tapered roller bearing outer race -1- for differential and shim -2- (behind outer race) from gearbox housing by hand.



Note

Thickness of shim has been measured to fit; the shim must not be replaced with another shim of different thickness.

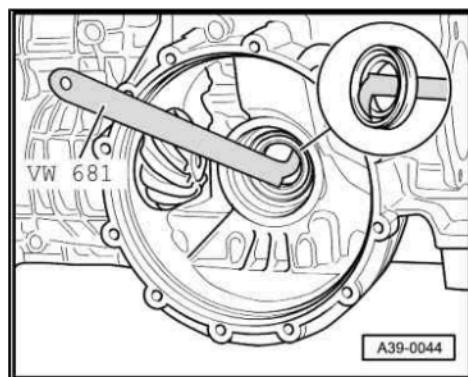


- Remove flange shaft (left-side) [⇒ page 161](#) .
- Pull out oil seal.



Note

The oil seal extractor lever must be applied behind the two sealing lips of the oil seal. Do not position at outer circumference of oil seal as the contact surface in the gearbox housing could be damaged. Guide the lever carefully when removing the seal.



- Examine oil seal seat in gearbox housing for damage; reface surface if necessary.

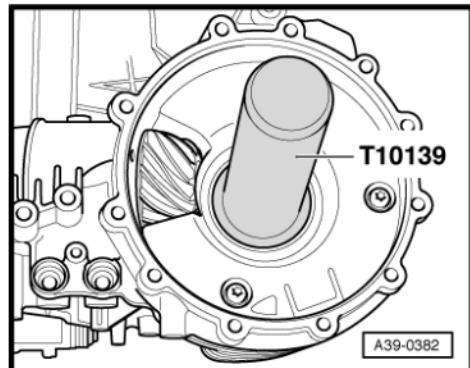
- Lightly lubricate outer circumference and sealing lip of oil seal with gear oil.



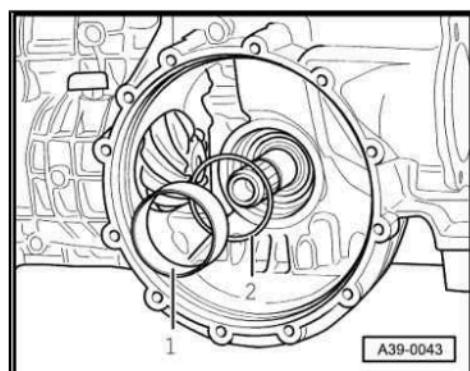
Note

Push oil seal onto thrust piece with the protruding sealing lip on the oil seal facing towards the tool.

- Drive in new oil seal as far as stop.
- Insert shim -2- and tapered roller bearing outer race -1- for differential onto stop in gearbox housing by hand.



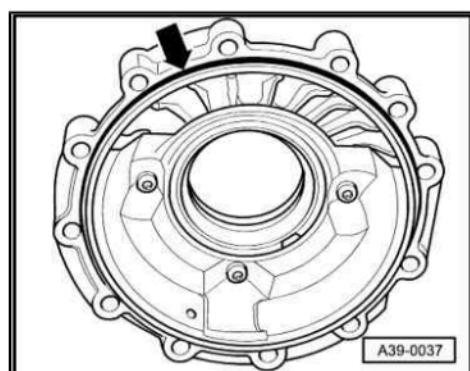
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- Renew O-ring -arrow-.
- Install differential in gearbox housing.

Note the following if the outer race for tapered roller bearing and the shim have dropped out of the front final drive cover:

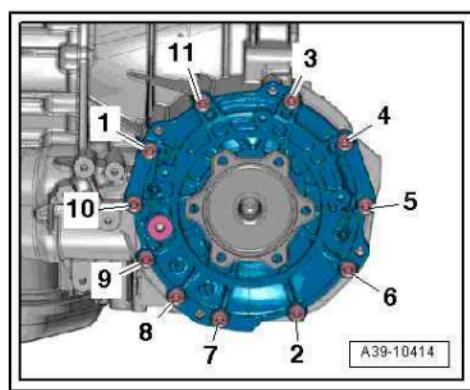
- Lubricate shim and outer race for tapered roller bearing with gear oil and insert in front final drive cover as far as the stop.



- Tighten bolts for front final drive cover [⇒ page 129](#).
- Install flange shaft (left-side) [⇒ page 161](#).
- Install flange shaft (right-side) [⇒ page 162](#).
- Fill up gear oil in gearbox after repairs [⇒ page 142](#).

Tightening torques

- ◆ [⇒ “1.1 Exploded view - final drive”, page 128](#)



4.3 Renewing oil seal (right-side)

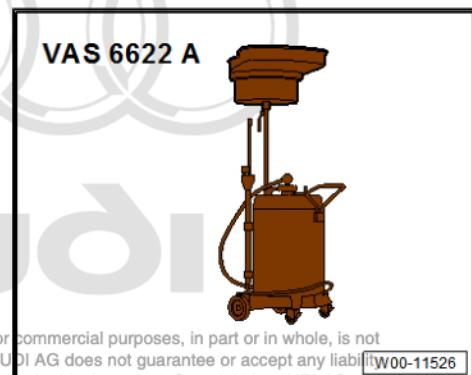
Special tools and workshop equipment required

- ◆ Oil seal extractor lever - VW 681- or extractor tool -T20143/2-



W00-11137

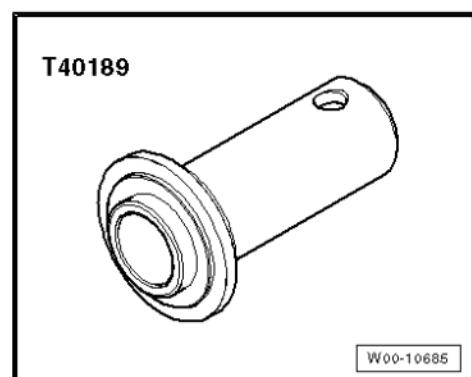
- ◆ Used oil collection and extraction unit - VAS 6622A-



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W00-11526

- ◆ Thrust piece - T40189-



W00-10685

Procedure

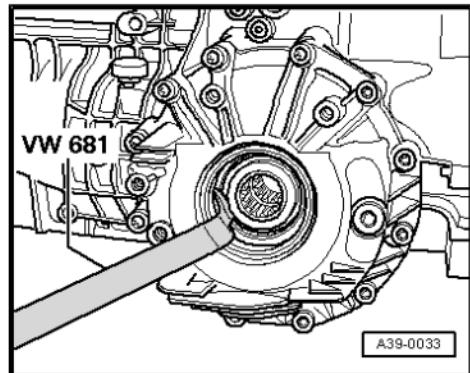


Note

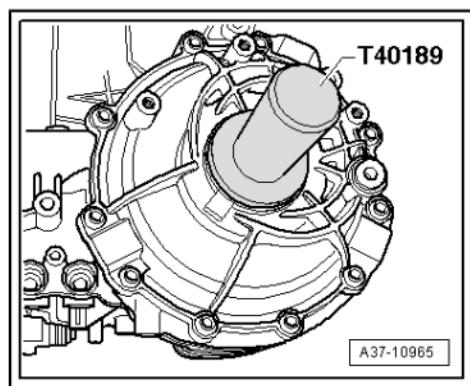
- ◆ Refer to general repair instructions [⇒ page 6](#).
- ◆ Note rules for cleanliness when working on automatic gearbox [⇒ page 5](#).

- Place used oil collection and extraction unit - VAS 6622A- below gearbox.
- Remove flange shaft (right-side) [⇒ page 162](#).

- Pull out oil seal for flange shaft (right-side).



- Lubricate outer circumference of new oil seal with gear oil.
- Installation position: the open side of the oil seal should face the gearbox.
- Drive in new oil seal as far as stop. Make sure that oil seal always remains straight when driving in.
- Install flange shaft (right-side) [⇒ page 162](#) .
- Fill up gear oil in gearbox after repairs [⇒ page 142](#) .



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5 Differential

⇒ "5.1 Removing and installing flange shaft (left-side)",
page 161

⇒ "5.2 Removing and installing flange shaft (right-side)",
page 162

⇒ "5.3 Renewing ball bearing for flange shaft (left-side)",
page 165

5.1 Removing and installing flange shaft (left-side)

Special tools and workshop equipment required

- ◆ Sealing grease - G 052 128 A1-

Removing

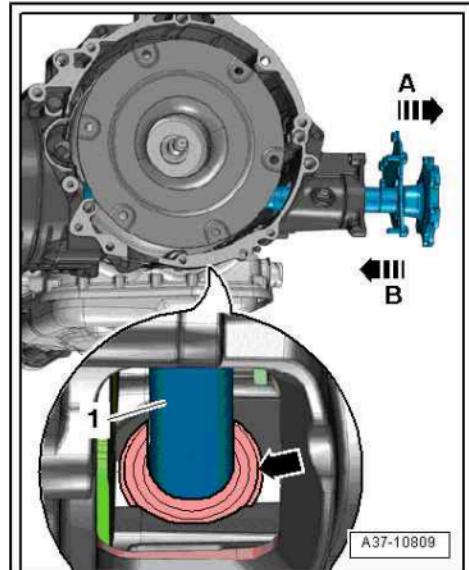
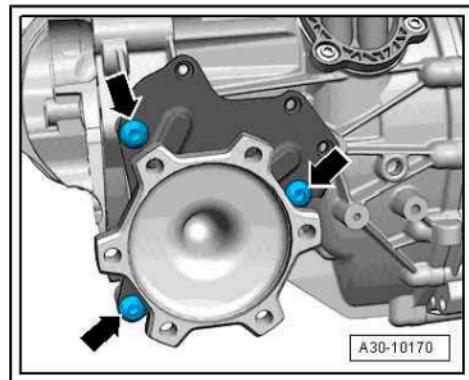
- Gearbox is secured to engine and gearbox support - VAS 6095- [⇒ page 106](#) .
- Tilt gearbox to rear on engine and gearbox support to prevent gear oil from escaping.
- Unscrew bolts -arrows- on mounting bracket for flange shaft.
- Remove flange shaft (left-side) -1- from gearbox in direction of -arrow A-.



Note

-Arrow B- can be disregarded.

- Remove torque converter ⇒ Servicing 8-speed automatic gearbox; Rep. gr. 32 ; Torque converter; Removing and installing torque converter .



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Installing

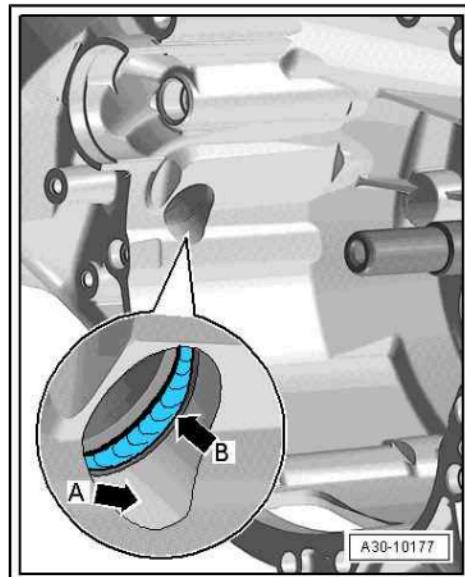
Installation is carried out in reverse sequence; note the following:

- Thoroughly clean flange shaft (left-side), area of torque converter bellhousing leading to differential -arrow A-, and oil seal -arrow B-.

 Note

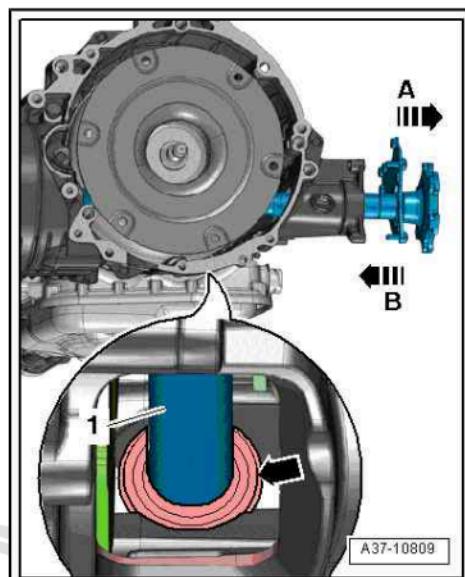
If oil seal between differential and gearbox housing -arrow B- is damaged, it must be renewed [⇒ page 128](#).

- Pack space between sealing lip and dust lip half-full with sealing grease - G 052 128 A1- .
- Install torque converter [⇒ Servicing 8-speed automatic gearbox; Rep. gr. 32 ; Torque converter; Removing and installing torque converter](#) .
- Slide flange shaft (left-side) -1- into gearbox in direction of -arrow B- (keep end of shaft centred while guiding it into oil seal on front final drive -arrow-).



 Note

- ◆ *The splines on the flange shaft will damage the oil seal -arrow- between the final drive and the gearbox housing if you do not keep the flange shaft centred.*
- ◆ *If the oil seal is damaged, it must be renewed.*
- ◆ *-Arrow A- can be disregarded.*

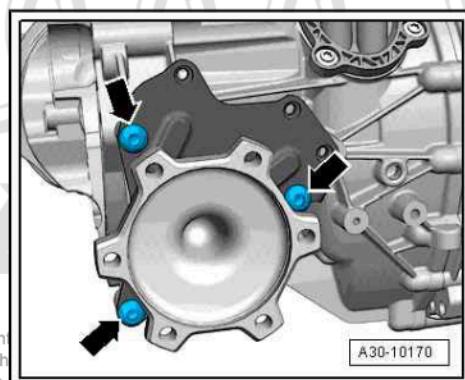


- Tighten flange shaft mounting bracket -arrows-.
- After installing gearbox, check gear oil level in front final drive [⇒ page 133](#) .

Tightening torques

- ◆ [⇒ "1.1 Exploded view - final drive", page 128](#)

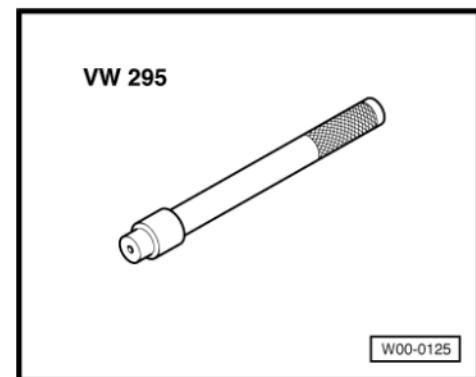
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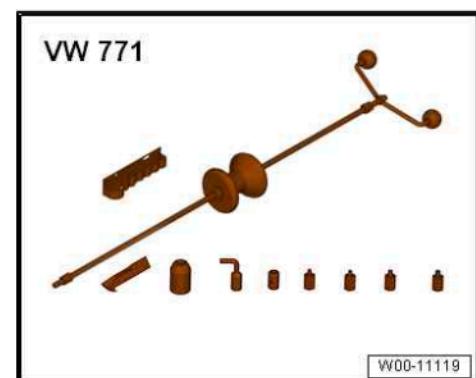
5.2 Removing and installing flange shaft (right-side)

Special tools and workshop equipment required

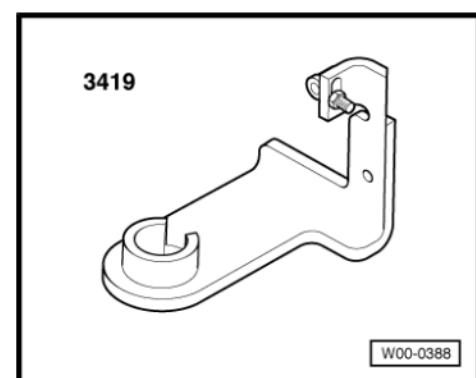
- ◆ Pin - VW 295-



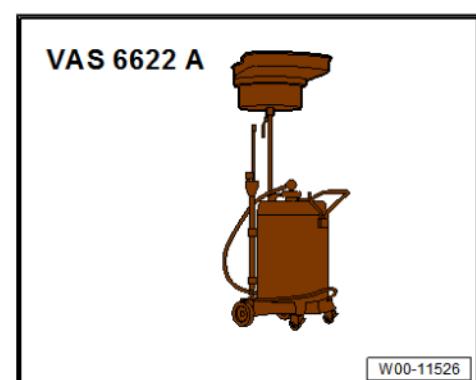
- ◆ Multi-purpose tool - VW 771-



- ◆ Counterhold tool - 3419-



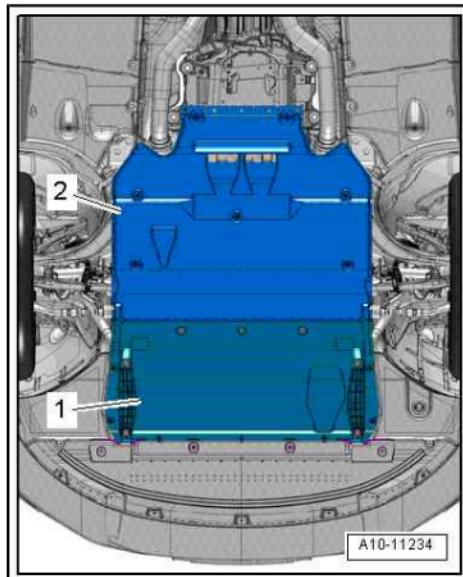
- ◆ Used oil collection and extraction unit - VAS 6622A-



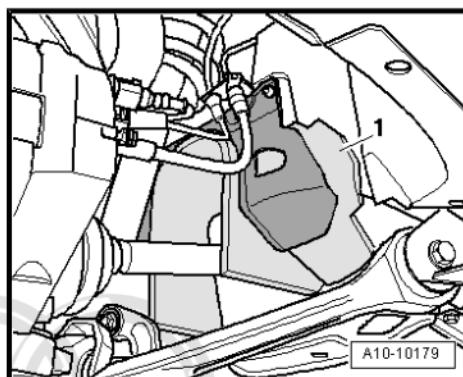
- ◆ Nuts M10 (2x)
- ◆ Sealing grease - G 052 128 A1-

Removing

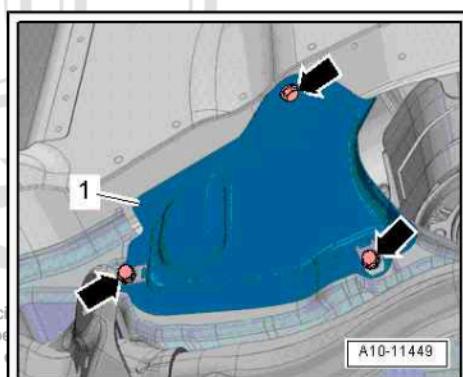
- Remove rear noise insulation -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .
- Remove front wheel (right-side) ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .



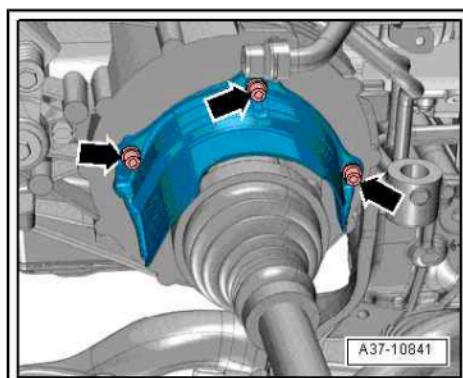
- Remove cover -1- for drive shaft (right-side) from wheel housing ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .



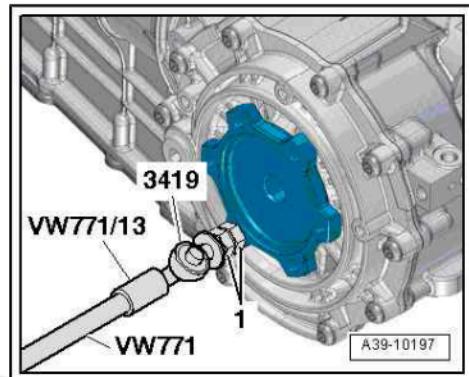
- Remove bolts -arrows- and detach heat shield (right-side) -1-.



- Remove bolts -arrows- and detach heat shield for drive shaft (right-side).
- Unbolt drive shaft (right-side) from gearbox flange shaft and move it towards rear ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



- Place used oil collection and extraction unit - VAS 6622A- below gearbox.
- Screw eye bolt from counterhold tool - 3419- into one of the threaded holes on flange shaft (right-side) with 2 nuts M10 -item 1- attached.
- Attach multi-purpose tool - VW 771- with -VW 771/13- to eye bolt and pull flange shaft off gearbox.



Installing

Installation is carried out in reverse sequence; note the following:

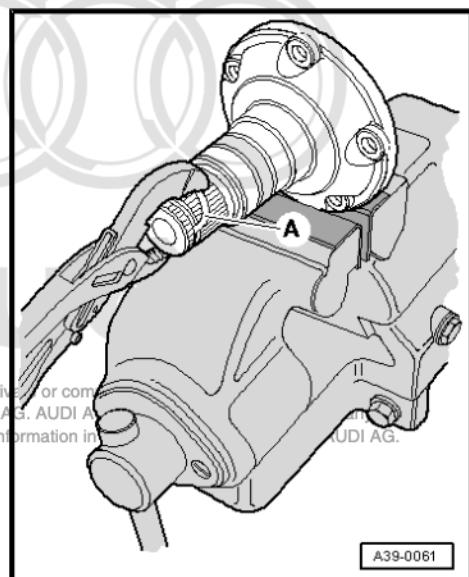


Note

Renew circlip for flange shaft (right-side).

- Clamp flange shaft in vice, using jaw protectors. Use new circlip -A- to press old circlip out of groove in flange shaft.
- Check flange shaft oil seal (right-side) for damage and renew if necessary [⇒ page 158](#).
- Pack space between sealing lip and dust lip half-full with sealing grease - G 052 128 A1- .
- Drive in flange shaft (right-side) with drift - VW 295- .
- Check oil level in front final drive and top up as required [⇒ page 133](#) .

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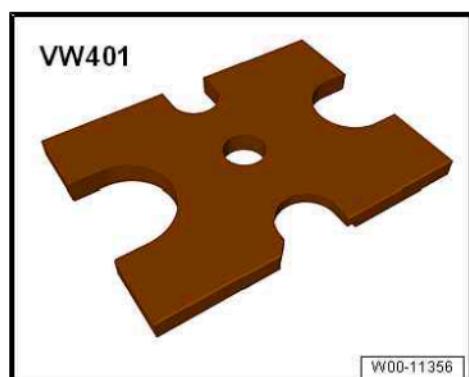
Tightening torques

- ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Exploded view - drive shaft
- Install cover for drive shaft (right-side) ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .
- ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres

5.3 Renewing ball bearing for flange shaft (left-side)

Special tools and workshop equipment required

- Thrust plate - VW 401-



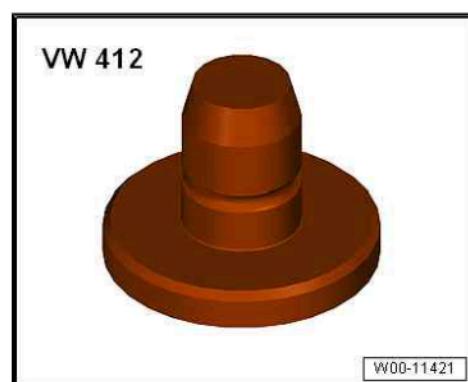
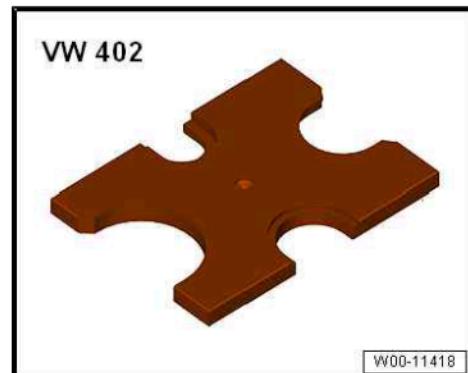
◆ Thrust plate - VW 402-



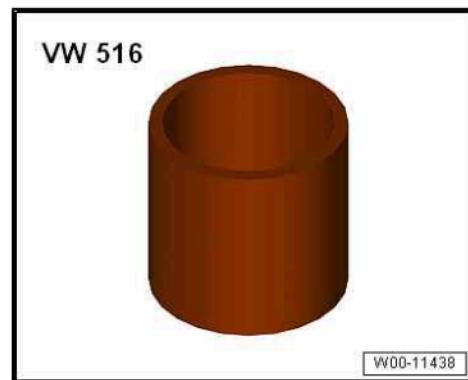
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◆ Press tool - VW 412-

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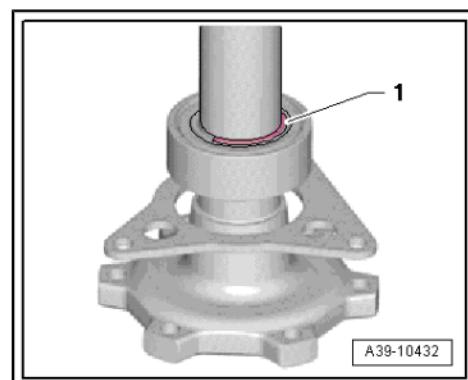


◆ Tube - VW 516-

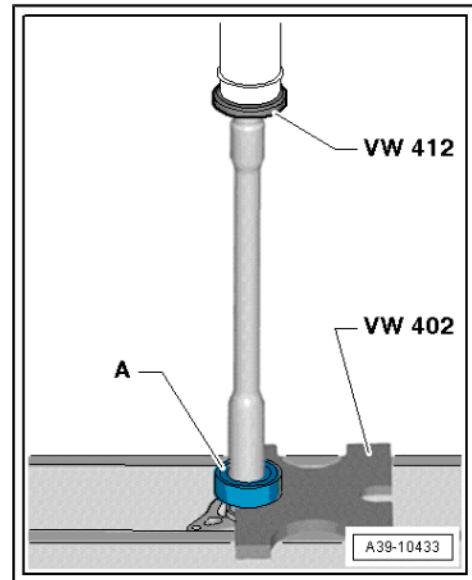


Procedure

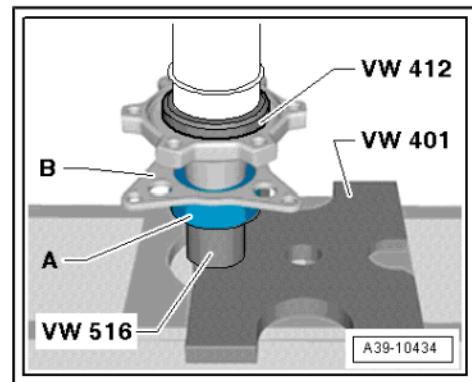
- Remove flange shaft (left-side) [⇒ page 161](#).
- Remove circlip -1- from flange shaft.



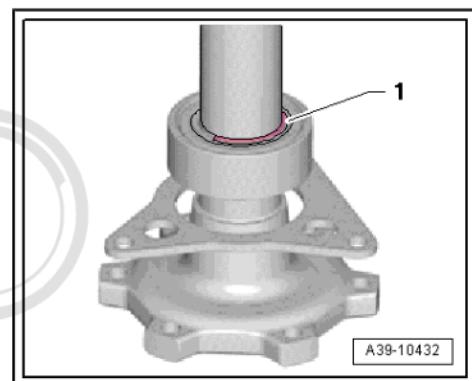
- Press ball bearing -A- off flange shaft.



- Press ball bearing -A- onto flange shaft as far as stop.
- Place mounting bracket -B- on ball bearing before pressing on bearing.
- Installation position of mounting bracket: lettering on mounting bracket faces towards flange.



- Fit circlip -1- in annular groove on flange shaft.

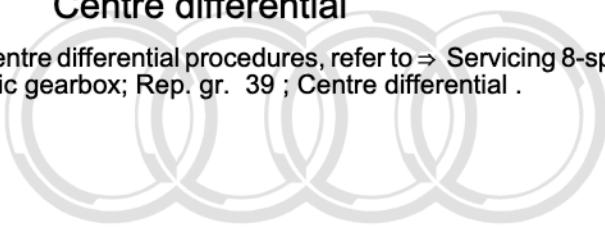


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6 Centre differential

For all centre differential procedures, refer to ⇒ Servicing 8-speed automatic gearbox; Rep. gr. 39 ; Centre differential .



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7 Transfer box

For all transfer box procedures, refer to ⇒ Servicing 8-speed automatic gearbox; Rep. gr. 39 ; Transfer box .



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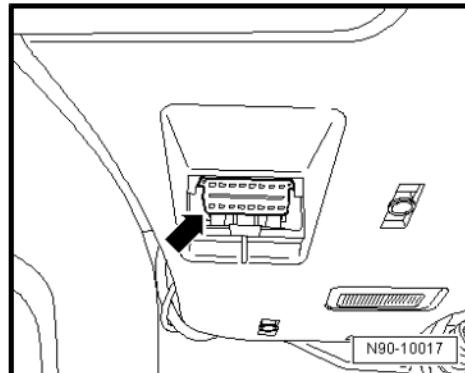
8 Gearbox control system

⇒ ["8.1 Overview of fitting locations - gearbox control system",
page 170](#)

8.1 Overview of fitting locations - gearbox control system

Diagnostic connection

- ◆ Fitting location: The diagnostic connection for the vehicle diagnostic tester is located in the driver's footwell.
- ◆ Before servicing the gearbox, the exact cause of the failure should be identified using [Guided Fault Finding](#), [Vehicle Self-diagnosis](#) and [Test Instruments](#) ⇒ Vehicle diagnostic tester.

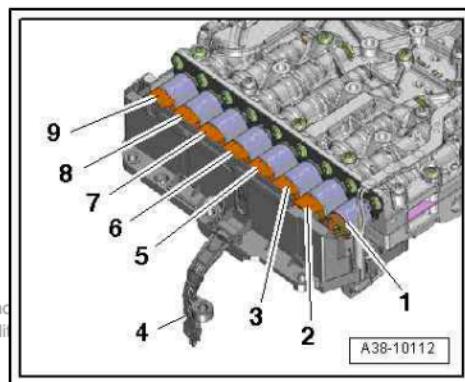


Mechatronic unit, automatic gearbox control unit - J217-, senders and pressure regulating valves - part 1

- ◆ Fitting location: the mechatronic unit is bolted to the underside of the gearbox housing and covered by the ATF oil pan.

The mechatronic unit incorporates the hydraulic control system, the electronic control unit and the sensors and actuators as a complete synchronised unit. This includes:

- 1 - Automatic gearbox pressure regulating valve 8 - N510- , on some versions also designated solenoid valve 1 - N88-
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- 2 - Automatic gearbox pressure regulating valve 7 - N443-
- 3 - Automatic gearbox pressure regulating valve 6 - N371-
- 4 - Gearbox output speed sender - G195-
- 5 - Automatic gearbox pressure regulating valve 3 - N217-
- 6 - Automatic gearbox pressure regulating valve 5 - N233-
- 7 - Automatic gearbox pressure regulating valve 2 - N216-
- 8 - Automatic gearbox pressure regulating valve 4 - N218-
- 9 - Automatic gearbox pressure regulating valve 1 - N215-

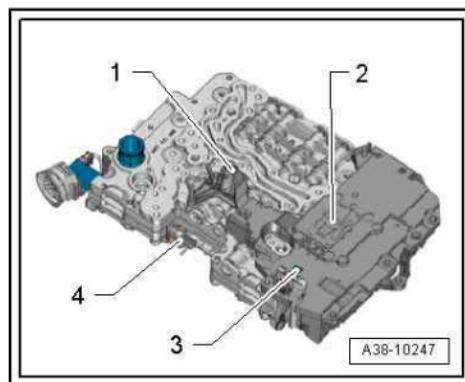


Mechatronic unit, automatic gearbox control unit - J217-, senders and pressure regulating valves - part 2

- 1 - Gearbox input speed sender - G182-
- 2 - Automatic gearbox control unit - J217-
- 3 - Gearbox oil temperature sender - G93-
- 4 - Gear sensor - G676-

Note

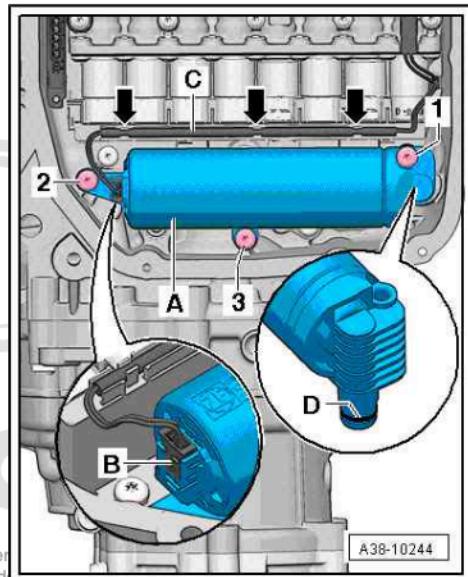
- ◆ All components mentioned are tested via self-diagnosis.
- ◆ The mechatronic unit can only be replaced as a complete unit.



Removing and installing ⇒ Servicing 8-speed automatic gearbox;
Rep. gr. 38 ; Mechatronic unit; Removing and installing mecha-tronic unit .

Hydraulic pulse accumulator -A- with accumulator solenoid - N485- (not fitted on all versions)

Removing and installing ⇒ Servicing 8-speed automatic gearbox; Rep. gr. 38 ; ATF system; Removing and installing auxiliary hydraulic pump for gearbox oil .

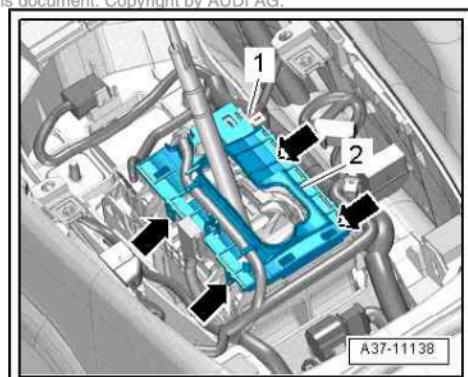


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Selector lever sensors control unit - J587- and tiptronic switch - F189-

- ◆ Fitting location: the selector lever sensors control unit - J587- and the tiptronic switch - F189- are combined in a single component -2- which is clipped onto the shift unit -arrows-.

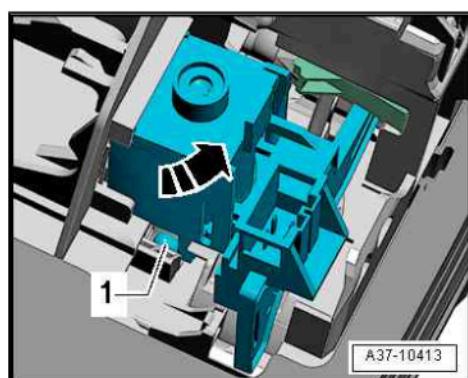
Removing and installing ⇒ [page 47](#)



Selector lever lock solenoid - N110-

- ◆ Fitting location: the selector lever lock solenoid - N110- -item 1- is clipped onto the selector mechanism.

Removing and installing ⇒ [page 45](#)



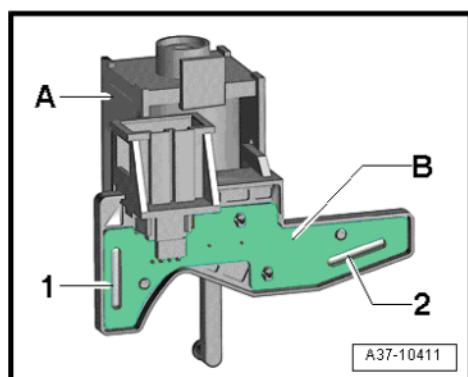
Gear selector position P switch - F305-

- ◆ Fitting location: Gear selector position P switch - F305- consists of two reed contacts (-1- and - 2-) and is installed on printed circuit board -B- in selector lever lock solenoid - N110- -A-.



Note

Gear selector position P switch - F305- can only be renewed together with selector lever lock solenoid - N110- .

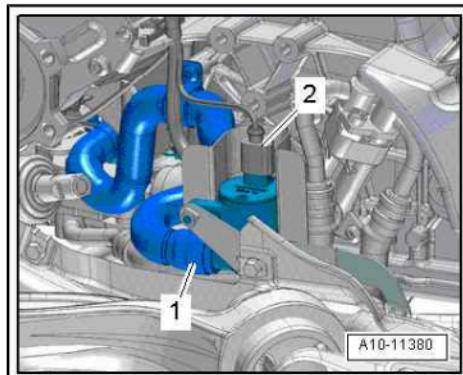


Coolant valve for gearbox - N488-

- ◆ Fitting location: The coolant valve for gearbox - N488- -item 1- is located at the rear left of the subframe.

1 - Electrical connector

Removing and installing ⇒ Rep. gr. 19 ; Coolant pump/thermostat assembly; Removing and installing coolant valves



Selector lever position display - Y6-

- ◆ Fitting location: the selector lever position display - Y6- -arrow- is integrated in the instrument cluster.



Note

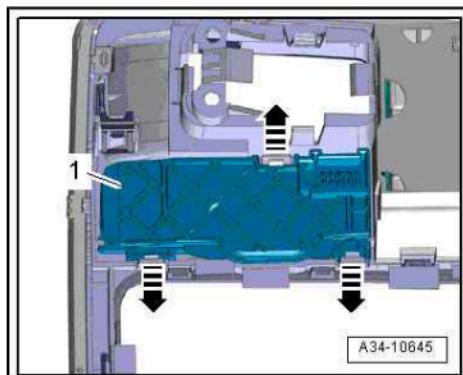
If the selector lever position display is defective, the instrument cluster must be renewed ⇒ Electrical system; Rep. gr. 90 ; Dash panel insert; Exploded view - dash panel insert.



Selector lever position display - Y26-

- ◆ Fitting location: selector lever position display - Y26- -item 1- is clipped into multimedia system operating unit - E380- .

Removing and installing ⇒ Electrical system; Rep. gr. 96 ; Lights; Removing and installing selector lever position display - Y26-



Kickdown switch - F8-

A programmed value from accelerator position sender - G79- / accelerator position sender 2 - G185- (integrated in accelerator pedal module) is stored in the engine control unit as the kickdown signal.

- ◆ Fitting location: the accelerator position senders are integrated in the accelerator pedal module -arrow- guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



Note

The accelerator pedal module must be renewed if one of the accelerator position senders is defective; removing and installing ⇒ Fuel supply system; Rep. gr. 20 ; Accelerator mechanism; Removing and installing accelerator pedal module with accelerator position sender -G79- / -G185- .

